Planning for the future

Essential Energy 2024–29 Regulatory Proposal

January 2023

Acknowledgement of Country

Our depots and offices across regional New South Wales (NSW) are located on the country of 29 First Nations – from Wiljakali Country on the plains of Far West NSW to Ngarigo Country in the high Snowy Mountains and Bundjalung Country on the subtropical North Coast of NSW, and more First Nations across the diverse landscape that is regional, rural and remote NSW and parts of southern Queensland.

We acknowledge the Traditional Custodians of the lands on which our network is located and where we conduct our business, and we acknowledge all Aboriginal and Torres Strait Islander peoples across Australia. We pay our respects to ancestors and Elders, past, present and emerging. We are committed to honouring Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to the land, waters and seas and their rich contribution to society.

95 per cent of NSW, 100 locations, 29 First Nations

This map identifies the 29 First Nations on which our 100 offices and depots sit. As Aboriginal Country borders fluctuate and more knowledge is being found every day, this map is subject to change. Spellings of Aboriginal countries and locations of depots and offices within Aboriginal countries have been made from desktop research conducted on each site (town and city) and correlation with the AIATSIS map of Indigenous Australia by David R Horton (creator), © Aboriginal Studies Press, AIATSIS, and Auslig/Sinclair, Knight, Merz, 1996. This is an estimate only based on desktop research and the AIATSIS map.

Regulatory Proposal Content

01

About this Regulatory Proposal

Chapter summary

- We've prepared a Regulatory Proposal for submission to the Australian Energy Regulator (AER) to cover the period from 1 July 2024 to 30 June 2029 (2024–29)
- We co-designed this Regulatory Proposal with customers and are presenting it in a way that makes it as easy as possible for customers, stakeholders and the AER to review our plans

Message from Essential Energy's Chair and Chief Executive Officer

We are pleased to present our 2024–29 Regulatory Proposal which has been developed in collaboration with our customers and stakeholders. It outlines our proposed business plans for 2024–29, the service levels and outcomes we intend to deliver to you, and the funding we will need to do so.

Essential Energy empowers communities to share and use energy for a better tomorrow, enabling energy solutions that improve life. Listening and responding to you – our customers – is at the heart of everything we do.

Every five years we submit a Regulatory Proposal and associated Tariff Structure Statement (TSS) to the AER, who will review these documents, examine our plans and costs, and decide how much customers' network charges will be for the next regulatory period.

To develop this 2024–29 Regulatory Proposal (Proposal), we consulted extensively with you and other stakeholders to determine how best to balance risks, costs and service levels.

You told us you want and need a safe, reliable and affordable network – one that is both resilient and flexible enough to accommodate new and emerging technologies.

We heard you. Your views helped shape this Proposal – but we're never finished listening. We want our business plans and services to truly reflect what our customers need, want and value.

We invite you to read our Proposal and then provide your feedback to the AER via their website at aer.gov.au or to us directly at:

Email: yoursay@essentialenergy.com.au

Post: Head of Regulatory Affairs
Essential Energy
PO Box 5730
Port Macquarie NSW 2444

Phone: 13 23 91

Web: https://engage.essentialenergy.com.au/hub-page/eeyoursay

Essential Engagement forum: engage.essentialenergy.com.au

Thank you

Doug Halley
Chair

John Cleland
Chief Executive Officer

Fact Sheet 2024-29 Regulatory Proposal
Planning for the future

essential energy
empowering

Delivering on our customers' priorities

Safety

SAFETY LEADER

We actively manage the network to reduce bushfires and manage biosecurity and other hazards

Affordability

	At 30 June 2024	By 30 June 2029	Increase in distribution charges p.a above CPI for 2024-29
Annual distribution charges for a typical residential customer (real $2024)	$803	$930	+2.97%
Annual distribution charges for a typical small business customer (real $2024)	$3,330	$3,855	+2.97%

(based on recent placeholder interest rates)

Reliability and resilience

Maintain reliability under normal conditions

Improve network and community resilience to better withstand extreme events

- **11,000** additional fire proof (composite) poles in high risk areas
- **6** microgrids
- **400** Stand-alone power systems
- **40 km** of high risk powerlines laid underground
- Portable community hub van and depot
- **50** portable solar streetlights
- Generators - **1,000** small, **20** medium, **20** large
- **20** portable Stand-alone power systems
- **3** new staff for resilience work

Good customer service and communication

New customer service metrics	Percentage of unplanned outages with an estimated resolution time	Complaint average resolution time	Customer effort/ease score
Weighting	50%	30%	20%

Future focused

Improve power quality

Facilitate greater levels of export and electric vehicles

Reduce carbon emissions by more than 160,000 tonnes of carbon dioxide equivalent over 2024–29

- Real-time network monitoring
- Up to **100** dynamic assets
- **50** radio sites with batteries and solar panels
- **20** depots upgraded with solar panels
- **850** light vehicles moved to electric
- **104** heavy vehicles moved to electric

Collective benefit

We will make pricing fairer by transitioning to more cost-reflective pricing, including two-way pricing

Transparency and simplicity

New customer relationship management system including a basic one-stop customer portal

A commitment to undertake extensive customer education around smart meters, tariffs and the introduction of two-way prices

The context for this Proposal

The Australian energy market is in the middle of rapid transformation, shifting from reliance on conventional energy sources to renewable energy. This move has been aided by big increases in the availability of consumer energy resources (CER) like rooftop solar, batteries, electric vehicles (EVs) – with advances in energy generation and storage technology.[1]

As a customer, you now have more choices about how you source and consume electricity. The growth in CER also means an increase in two-way flows of electricity with more of you wanting to export to the grid, create value from your investments, and reduce climate change. We have embraced this transformation and have taken it into account when preparing this Proposal.

In recent years, our customers and communities – including many in remote areas – have experienced severe bushfires, floods and/or storms, testing the resilience of our network and highlighting how important electricity is to communities. We have used these challenges to investigate new ways to improve resilience and lower overall network charges in the long run, such as using:

- stand-alone power systems (SAPS) – generally a combination of solar panels with a battery and a back-up diesel generator – to provide better reliability for some of our customers; and
- composite poles – rather than timber, using poles made of flame-retardant composite material that is also resistant to termites in areas of high-risk.

We continue to focus on understanding what is important to you – and making sure we deliver it. When we asked you about your priorities for this Proposal, you told us you wanted a safe, reliable, resilient and affordable network that can accommodate new and emerging technologies.

Why we are preparing this Proposal

We provide a range of electricity distribution services in regional, rural and remote NSW. We connect you to the network of poles and wires; manage the network; provide metering services and public lighting; and supply non-routine services, such as conducting special meter tests.

As an electricity distribution business, we are subject to economic regulation by the AER under the National Electricity Rules (NER). This means the AER imposes revenue and/or price controls on most of our distribution services, usually for a five-year period.

This Proposal sets out our recommended revenue requirement and how this will be reflected in customer charges over the five years from 1 July 2024.

Our approach

Delivering customer value means managing and balancing risks, costs and service levels.

Risks: Our robust risk framework links everyday decision-making to optimal outcomes in safety, network performance, service delivery and sustainability. We will continue to use sophisticated technology and systems to help us match customer needs with network maintenance and investment.

Costs: Our operating and capital expenditure forecasting methodologies ensure that this Proposal reflects the cost-efficient delivery of our services to meet your needs.

Service levels: Our network is ageing, which means it is vital we use advanced asset management approaches to ensure it can sustainably provide reliable and resilient services at the required levels over the long term. We link whole-of-life asset planning strategies and sophisticated risk management to our asset management decisions, so we can assess all network activities on their ability to deliver real benefits to you.

How this Proposal is structured

We have used an approach for this Proposal that makes it as easy as possible for customers, stakeholders and the AER to review our future plans.

This Proposal is supported by a fact sheet and an overview paper that:

- provides a plain English summary of the full Proposal and the TSS
- describes how we engaged with customers and stakeholders while developing this Proposal and TSS, and how we responded to the important matters raised
- includes the key risks and benefits for customers and compares our total revenue requirements for the 2019–24 and 2024–29 regulatory periods, explaining the material differences between them.

[1] CER is often referred to interchangeably as distributed energy resources (DER), however, DER is a broader description and includes large scale generation such as solar farms and grid-scale batteries. See Chapter 14 Glossary.

02

Executive summary

Chapter summary

- This Proposal is designed to help us deliver you safe, reliable and affordable energy from 2024 to 2029
- The proposal includes annual price increases of 2.97 per cent before inflation
- We've developed an approach to pricing that will minimise potential bill shock and ensure that the costs of our network are fairly shared

We're listening

Essential Energy is committed to delivering a service that meets the needs of our customers – which means you.

In line with that commitment, this Proposal has been co-designed with customers, and reflects the priorities which have been developed through an extensive engagement program that started at the end of 2019.

In line with these priorities, this Proposal includes our approach to future investments and pricing.

It's designed to help us deliver safe, reliable, resilient and affordable energy from 2024 to 2029 – a period in which the Australian energy market will be undergoing many changes. You also want us to be future focused and to innovate in ways that encourage – rather than limit – the growth of renewable energy generation and storage.

We're also doubling down on our commitment to restore services as quickly as possible after bushfires, floods and severe storms, and new technology is a big part of that. To that end, you told us that you support more investments in composite poles, undergrounding powerlines, microgrids, SAPS, generators, portable SAPS, portable solar streetlights, as well as new staff to work with councils, communities and critical infrastructure asset providers to help them develop resilience plans.

Overarching this, is a requirement from our customers to undertake a well-considered measured approach of adapting to the pace of change.

Our proposed charges

What is happening to our charges?

Our industry is undergoing significant change. At a policy level, there is the national commitment to reduce emissions and to reflect this in the National Energy Objectives. There is also the NSW Government's *Electricity Infrastructure Roadmap* (NSW Roadmap) and the anticipated NSW Green Hydrogen Exemption Scheme.

You'd like us to invest in our network now to protect it from the increasingly severe bushfires, floods and storms caused by climate change, and which are likely to increasingly impact the reliability of your electricity supply.

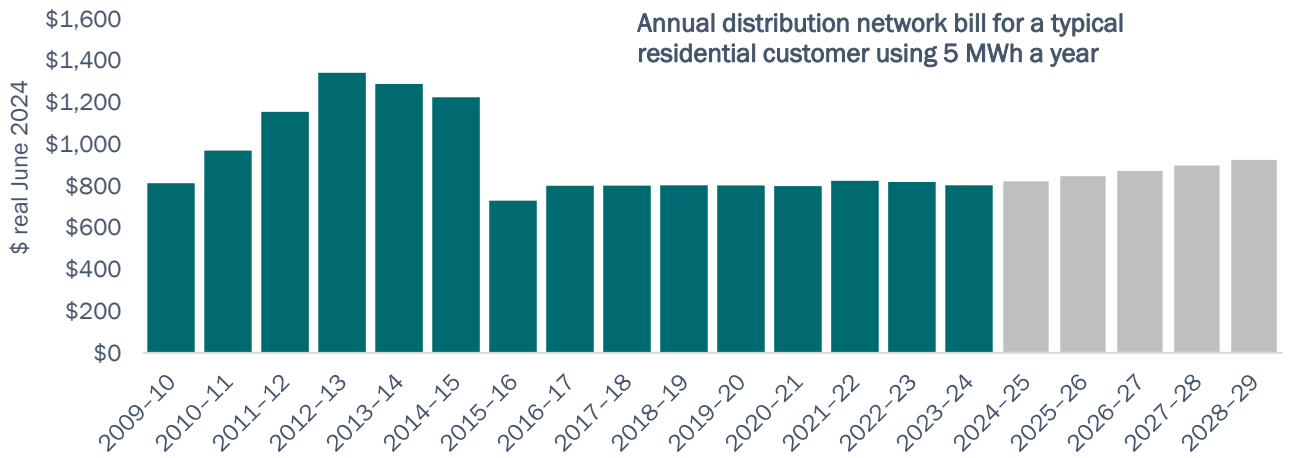
We're all also using more energy than ever before, whether to connect online, charge our mobiles or EVs, or make use of streaming services. And, of course, those people who depend on respirators and other medical equipment, rely on stable energy supplies – as do the refrigeration systems that keep our food fresh and the purification systems that keep our water drinkable.

Many of you have installed solar panels, either in response to increasing energy prices or to reduce your carbon footprint – or both. This has effectively turned many homes and businesses into mini power plants that export energy into our network during the day and import from it at night.

All of which has an impact on our electricity distribution network of poles, powerlines and substations. How quickly we adjust to these changes is a delicate balance between improvements to resilience, reliability and power quality, and the impact on electricity bills.

In short, 'keeping the lights on' is more important – and complex – than ever.

How much are our charges moving?



In our Draft Proposal we indicated that network charges were likely to be higher in 2024 due to higher interest rates. Under our Proposal, network charges will increase by 2.97 per cent per annum before inflation for the 2024–29 regulatory period – this means that the average residential customer bill will increase by about $25 each year. The average customer retail bill will therefore increase by 1.13 per cent per annum in real terms, assuming no other changes.

These increases are primarily because of higher interest rates and inflation, with a small amount related to investments that will make the network more resilient and better able to adapt to the rapidly changing conditions we described earlier. Interest rates and inflation are important inputs to the way the AER regulates our revenue and prices, so changes in these factors impact your network charges. The actual rates that will be used by the AER in our Determination are likely to be different again.

We also have large, fixed costs, like other network operators. This means that even though not everyone is using the network all the time, we still have to provide and maintain it so that it is ready whenever needed. We have been working to improve our efficiency as a business – we are keenly aware of the impact of network charges on households, and the need to keep our distribution charges as low as possible.

Other changes in our pricing approach

When setting our prices, we consider:

- our role in energy supply
- how customers' use of the network will evolve
- what our network is capable of now and what it will require in the future
- how our prices can encourage you to help lower future costs.

We are introducing 'two-way pricing' (prices that charge for both consumption and exports) as part of our efforts to lower costs and improve fairness. It will reward you for exporting electricity (from solar panels or batteries) during peak consumption periods and also encourage you to avoid doing so at times when there is excess electricity in the system (around the middle of the day). We aim to slowly introduce changes to network charges to avoid potential bill shock and give those of you who have invested in solar panels the chance to recoup your investment.

We've also sought to be fairer, ensuring our charges better reflect the costs of managing our large rural, regional and remote network. Our proposed approach will impact individual customers differently, depending on when and how the network is used. **Chapter 12** provides an overview of how we have developed our pricing and the principles that informed their development.

Further information on our pricing approach is available in our Tariff Structure Statement - **Attachment 12.01**.

Our future is to empower you

Over the next year or so we will continue to engage with you, other industry stakeholders and policy makers to ensure our network is well placed to respond to and accommodate changes in the market.

Looking forward, our network has capacity to connect more customers and handle more consumption and exports in many areas. However, the network's ability to cope with increases in some areas is limited, so we need to manage the transition in a way that minimises disruption and results in a better utilised network.

Our aim? To improve reliability and enable higher levels of export capacity and more renewable generation which will contribute to reduce overall costs.

Underpinning all of this is our vision to empower communities to share and use energy for a better tomorrow. We believe this Proposal is an important step in delivering that vision.

Our expenditure

Over the 2019–24 regulatory period, our operating expenditure (opex) is expected to be around nine per cent above the allowance provided by the AER. This was largely because of the extraordinary series of events that occurred:

- the Black Summer bushfires (2019–20) burnt more than three million hectares of land across our network footprint, damaging communities and destroying much of the electrical infrastructure. We needed to replace more than 3,200 poles and over 104,000 of our customers experienced long outages
- major flooding events in 2021 and 2022 damaged more assets, particularly across the North Coast and large parts of the Central West – some of these areas were just recovering from bushfires and record rainfall has further impacted access to those areas to restore the network
- COVID-19 also forced us to transition our workforce to work from home, increasing our spend on information and communications technology, and caused significant supply chain issues resulting in delays and higher costs.

At the same time, our capital expenditure (capex) is forecast to be about two per cent below the allowance provided by the AER, as those unexpected events impacted the scheduled delivery of our work programs.

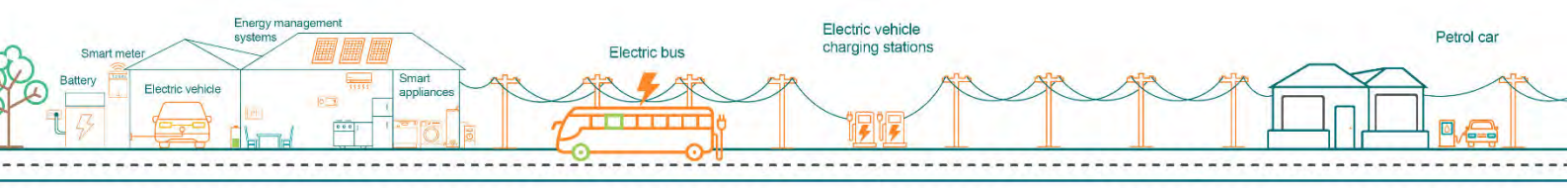
Our proposed expenditure and revenue over the 2024–29 regulatory period

We consulted with you on the type of investments that were important. Our expenditure plans reflect your preferences for greater levels of resilience and proactively making the network an enabler of a future with greater levels of renewable energy – which also result in lowering carbon emissions by more than 160,000 tonnes (CO2-e) during 2024–29.

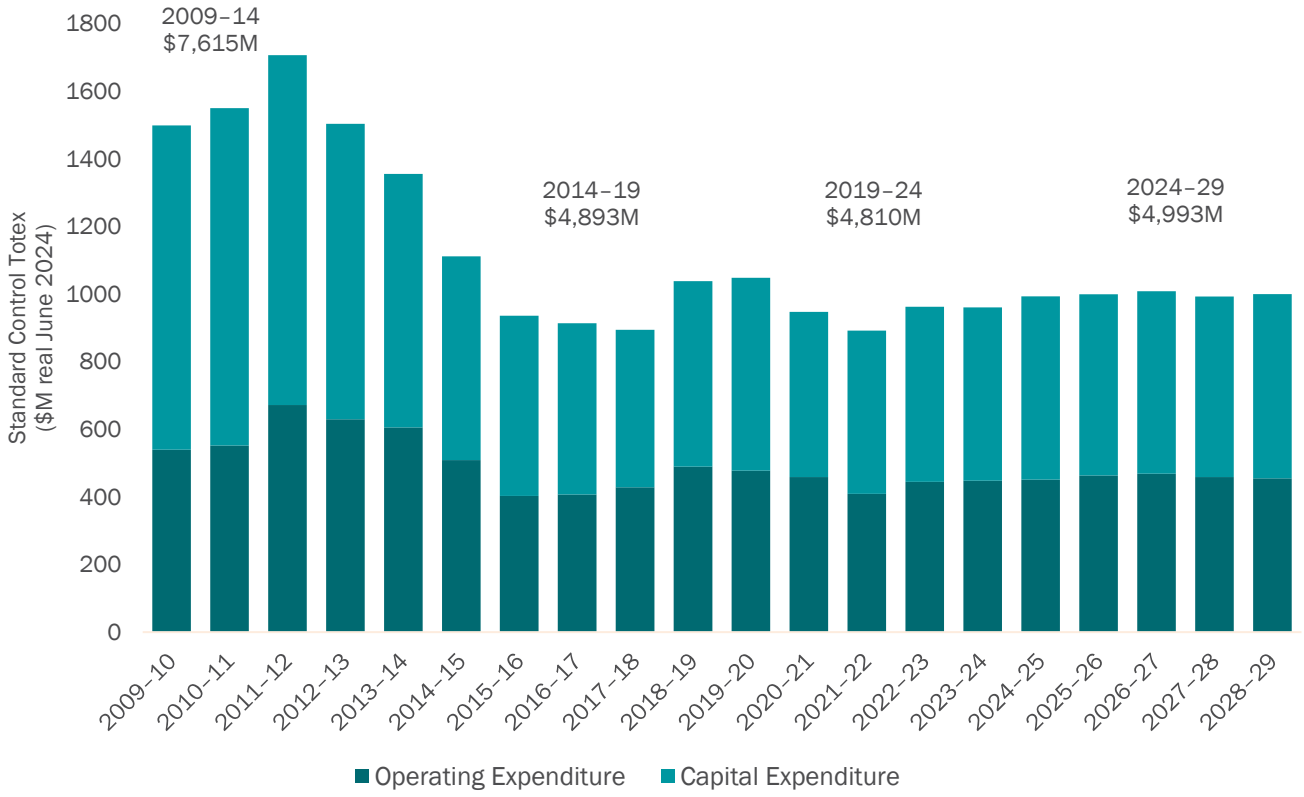
Over the 2024–29 regulatory period, we are proposing to:

- Spend an average of $459 million (real $ June 2024) each year in opex, which is 3 per cent above our average expenditure over the 2019–24 regulatory period
- Spend an average of $539 million (real $ June 2024) each year in capex, which is 5 per cent above our actual average capex over the 2019–24 regulatory period

This results in an increase in our annual regulated revenue of 2.97 per cent before inflation.



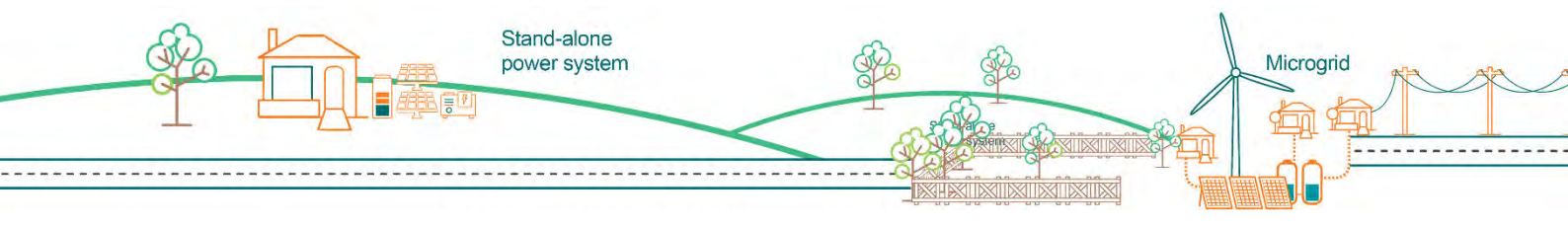
Our proposed operating and capital expenditure compared to historical expenditure



Our proposed expenditure over the 2024–29 regulatory period includes proactive planning to:

- deliver a safe, reliable and resilient electricity network for customers. This means:
  - maintaining current reliability and service standards
  - investing to improve community and network resilience
  - investing in public safety, bushfire and biosecurity management programs
- integrate electric vehicles, renewable and new technologies in a sustainable way. This means:
  - redefining our core services to further enable two-way energy flows
  - investing in smart technology to monitor and dynamically manage the network
  - introducing two-way prices to better align the relationship between network usage and costs

Our investments will help deliver on our customers' priorities. Further information on our operating and capital expenditure forecasts is provided in **Chapters 9 and 10**.



03

About Essential Energy

Chapter summary

- Essential Energy operates and maintains one of Australia's largest electricity distribution networks, spanning 95 per cent of NSW and parts of southern Queensland
- The unique nature of our network means that we face challenges of geography, low population and extreme weather
- We prioritise safety and aim to enhance the reliability, security and cost efficiency of the network, while maintaining downward pressure on network charges
- We are continuing to ensure we meet your and your communities' changing needs, now and into the future

The communities and customers we serve

Essential Energy is 100 per cent owned by the NSW Government. Our core business is building, operating and maintaining one of Australia's largest electricity networks. We focus on delivering safe, reliable and sustainable electricity, while keeping downward pressure on your network charges.

Our electricity network extends across 95 per cent of NSW and parts of southern Queensland. It covers diverse environments, ranging from subtropical conditions in northern NSW, to the alpine environment in the Snowy Mountains and arid climates of western NSW. This wide geographic spread and the demographics of the communities we serve distinguish us from other electricity distributors. We have about a third of the number of customers per kilometre of powerline compared to the average electricity distributor in the National Electricity Market (NEM). This has a significant impact on the cost of servicing our customers because we need more poles and wires per customer, compared to most other networks.

1.4 M
power poles

163,417 km
of powerlines in designated bushfire zones

364
zone substations and 139,303 distribution substations

36.8 years
average age of network assets

4.75
customers per km of powerline – the lowest customer density in the National Electricity Market

3,100
employees approximately

130 apprentices with 44 appointed in 2021-22

96
depots

337
radio towers

95%
of NSW and parts of southern Queensland

183,099 km
of overhead powerlines

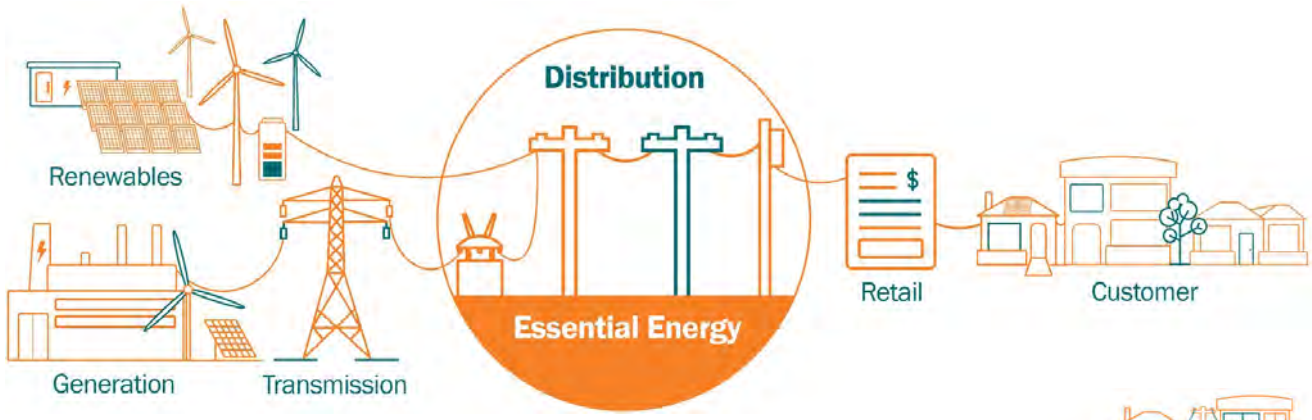
>880,000
electricity customers

596
heavy vehicles

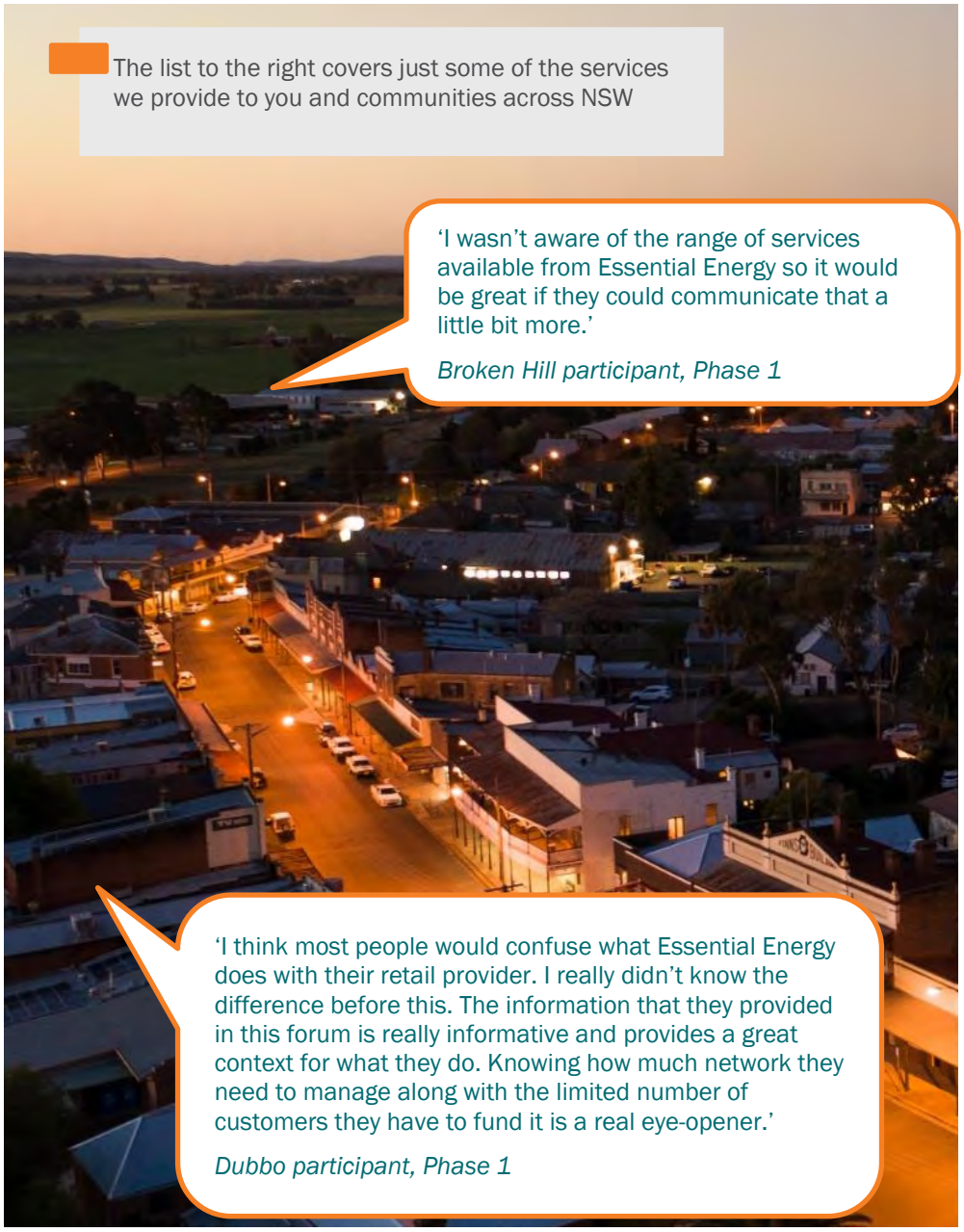
1,245
light vehicles

We are one part of an evolving electricity supply chain

It is important that you and our other stakeholders understand our role in the electricity supply chain. We take electricity from generators and transmitters and distribute it to customers across our operating area. Retailers package all these costs and include them in your electricity bill. Our distribution charges make up about 38 per cent of the electricity bill you receive from your retailer. Customers have told us that they are still unsure about our role in the supply chain.



The list to the right covers just some of the services we provide to you and communities across NSW



'I wasn't aware of the range of services available from Essential Energy so it would be great if they could communicate that a little bit more.'

Broken Hill participant, Phase 1

'I think most people would confuse what Essential Energy does with their retail provider. I really didn't know the difference before this. The information that they provided in this forum is really informative and provides a great context for what they do. Knowing how much network they need to manage along with the limited number of customers they have to fund it is a real eye-opener.'

Dubbo participant, Phase 1


Supplying electricity to your home and business


Maintaining electricity poles and wires in your area


Fixing electricity outages and interruptions


Trimming vegetation around powerlines


Facilitating new connections or altering existing connections


Connecting renewables to the network (e.g. solar electricity)


Providing advice to households on electricity usage


Installing, maintaining and operating street lighting


Reading basic accumulation electricity meters

Our cost drivers and emerging challenges

Most of our network costs are driven by the number of assets required to deliver electricity to each point of the network, largely irrespective of the number of customers like you, who are connected. Each asset requires inspection and maintenance, and eventually replacement at the end of its life. The more widespread the network, the greater the costs to build, operate and maintain.

The characteristics of our network mean it is not straightforward to compare our efficiency to that of other distributors. For example, we do not benchmark favourably against urban distributors when the efficiency measure is based on customer numbers. However, we benchmark as the most efficient Australian distributor in terms of costs per kilometre of network, as this comparison better accounts for the lower customer density of our network. This comparison highlights that assessments of the relative efficiency of our capital and operating expenditure are commensurate with the number of network assets we operate and maintain. Based on the benchmarking data issued by the AER in 2022[2], we own 26 per cent of total line length in the NEM but incur only 14 per cent of the total operating expenditure.

Key cost drivers and emerging challenges for our network

Scale and number of assets built over time

Scale of network

Working with a network built over time

Number and age of assets

Essential Energy has one of the largest electricity distribution networks in Australia. It is costly to inspect and maintain because of the number of physical assets and the size of the area we service.

Our network was built over many decades and at a lower voltage than modern networks.

Largely regional and rural network

>32 million kms travelled by our employees each year

10 powerline sections >1,000 kms long

80 per cent of our network is rural. This can make it difficult to locate and repair faults.

Our crews can travel hundreds of kilometres over challenging terrain to investigate and repair faults.

It is harder to maintain power quality over long distances and to restore power quickly after supply interruptions, as there is no alternative supply source.

Low population density

Low customer density

High cost to serve

Our network service area has one of the lowest average customer densities among Australian distributors.

When there is a low population and the area is isolated from the main network, the cost per customer to deliver electricity is relatively high.

Extreme environments

More than 15,000 lightning strikes per year on the network

Extreme variations in both weather and terrain

Vegetation management

Our network covers most of NSW, from the coast to the hinterland, mountains and plains. This means different parts of our network experience different, and sometimes extreme, seasonal weather conditions.

Changing Climate

21 major event days since 1 July 2019 (12 in 2021–22)

463 average minutes customers were without supply due to major events since 1 July 2019

The importance of a reliable supply of electricity is increasing but at the same time the threat to the network from climate change is also shifting.

We can see that global temperatures are increasing. We also know that natural hazards and extreme weather events are becoming more frequent and more severe.

Increasing exporting technologies

Increasing solar-related power quality complaints

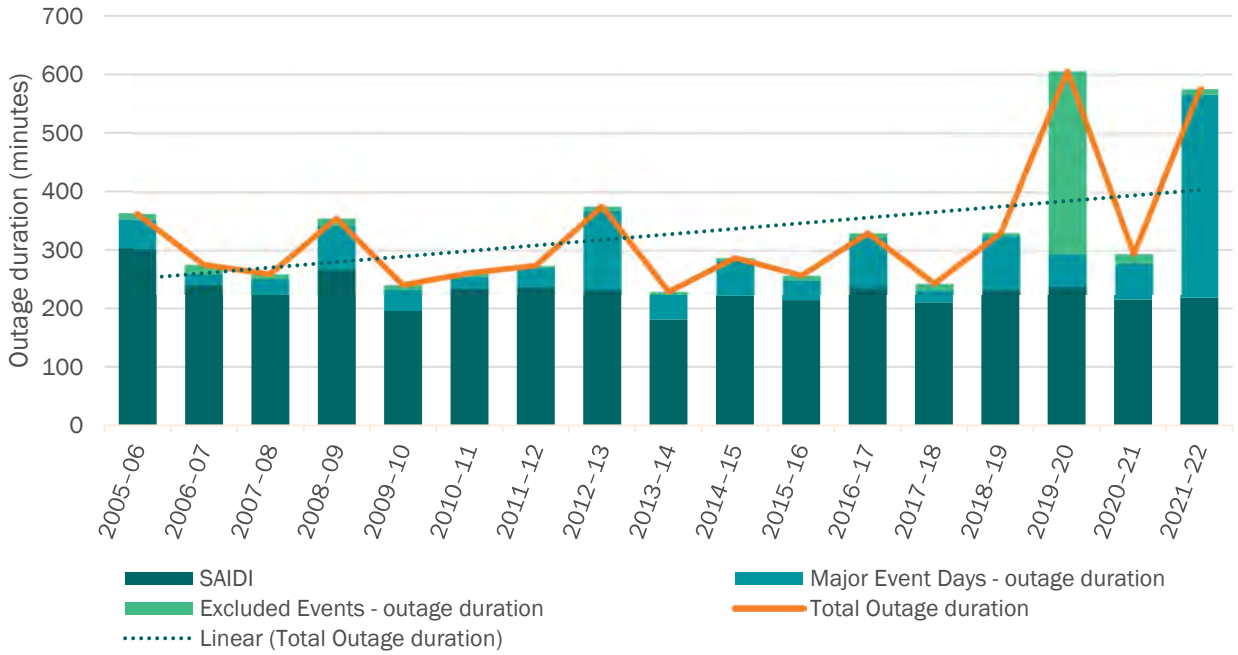
6.0 kW average system size, almost double that of 10 years ago

More than 27 per cent of our customers already have solar panels and customers are now installing larger systems than in the past.

In addition, newer appliances tend to be more sensitive to any changes in voltage than older appliances, which means it is even more important for customers that we are able to manage voltage levels.

[2] AER, *Annual benchmarking reports 2022*, Nov 2022

Total outage duration, including Major event days (MEDs) and 'Excluded Events'



The chart above shows the impact of extreme events on the outage times that our customers are actually experiencing. We usually report on outages after excluding for major events and other issues outside of our control. In recent years, the minutes of outages that customers experience (before exclusions) have been increasing due to events such as bushfires and floods. These trends are what we are planning to mitigate, with investments to improve resilience (refer **Chapter 6**).

Our response to the changing electricity market and customer needs

This Proposal has been shaped by your views and preferences. We listen to and respect you, safely deliver on our promises, and place you at the centre of everything we do.

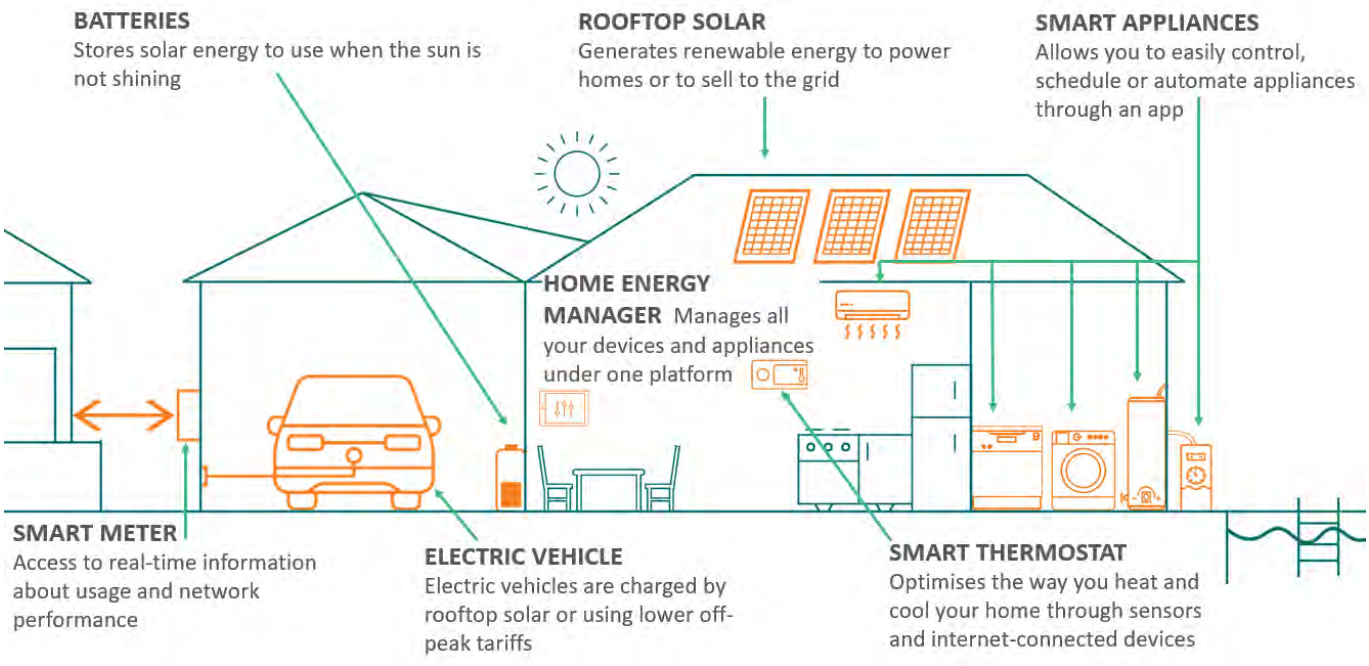
We are always evolving in response to changing customer needs. We embrace new technologies such as solar, batteries, EVs and the potential for customers to transfer energy to each other (peer-to-peer trading).

The energy industry is undergoing unprecedented change. Electricity generation using fossil fuel is being rapidly replaced by renewable energy generation, and EVs are becoming more popular.

Customer expectations are also changing. You told us that you want services that are safe, reliable and affordable, but you also want the flexibility to export to the grid from your own CERs such as solar electricity generation and storage systems. A growing number of these small-scale units have been connected to our network in the last few years.

A video of the future vision

How our homes will change in a cleaner, greener future



These changes bring significant benefits, including giving everyone cleaner and greener energy, and present exciting opportunities for you, the community and Essential Energy. However, they also bring challenges, including affecting how we invest in and operate our electricity network.

Our network was built to transport power in one direction, from a few major generators (such as large coal and gas-fired plants, and large solar and wind farms) to homes and businesses. With the growing adoption of CER, we need to adapt our network to manage more two-way energy flows, to and from customers, without compromising reliability and safety. So we are working to improve the integration of CER into our network, and collaborating with industry, government and research partners to optimise network configuration and performance.

'This is a good move towards a more sustainable future.'

Inverell participant, Phase 3

In 2020–21, as part of the NSW Roadmap, the NSW Government released its plan for Renewable Energy Zones (REZs), with three to be located within our network area. We are working with the Government and other stakeholders to ensure these REZs contribute to giving you safe, reliable and affordable energy.

Additionally, we are engaging with EV charging providers to improve charging infrastructure connections and manage network constraints to accommodate EV charging demands. We have also trialled batteries to enhance network reliability and performance, and we are improving our capability and service offerings in relation to SAPS, including trialling hydrogen SAPS.

'If you could reduce how far the electricity has to travel then that is a good thing. If you are all working together then that's good. It is power generated locally and will be more reliable.'

Taree participant, Phase 1

'It matches our energy future – we are putting money into what is needed and wanted for the network to move towards that.'

Ballina participant, Phase 4

We are improving our performance and delivering greater value to our customers

We are continuing our transformation journey, becoming more efficient and giving you greater value, while ensuring the safety of our workforce and customers is prioritised. For example, we have implemented a new digital modelling platform to create 'digital twins' of our network; automatically check designs for compliance with standards; and perform network modelling scenarios to assess value creation. We have developed Customer Journey Maps to improve customer experience through the prioritisation of key areas of process improvement and resourcing. This is in addition to having installed in-vehicle monitoring systems in our operational fleet to improve driver and passenger safety, and rolled-out a digital hazard identification risk assessment control (HIRAC) tool for our work crews.

We are also developing a new enterprise asset management system, and establishing an online platform to simplify and speed up processes for connecting to our network. These initiatives will continue to provide value to you in terms of lower costs, reduced safety risk, and time-savings when you need to deal with us.

Challenges

In recent years our business, along with the communities we live and work in, has experienced several unprecedented challenges such as the ongoing COVID-19 pandemic and natural disasters in the form of major bushfires and floods. Many of our employees have transitioned to working from home – our earlier investments in technology platforms meant we could successfully and rapidly implement this move.

We worked hard to ensure that we could maintain the essential services you needed and make progress on the important work of preparing the business for the future. This included improving cyber and physical security capabilities to protect our critical infrastructure from increasingly sophisticated threats. In addition to these challenges, economic headwinds that are outside our control are increasing our costs. The pandemic caused issues with supply chains and resources, and more recent geopolitical tensions have exacerbated those issues.

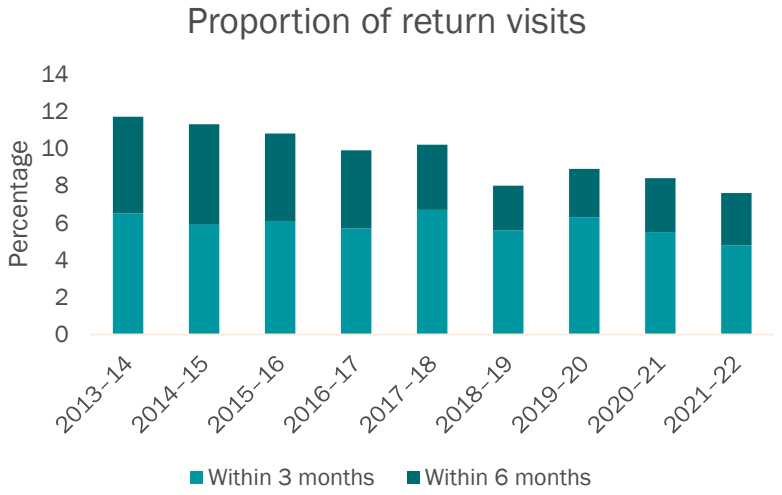
This Proposal contains forecasts of further efficiencies arising from:

- continuing to deliver on initiatives that allow our business to work better and smarter
- investing in the network to enable more renewable generation, and
- improving the resilience of our network.

Case study – Improving efficiency

As part of our Commercial Capability initiative, we identified that having to make **return visits** to poles was a major impediment to productivity. This is where there are a variety of jobs needing to be done on the same pole.

We have looked to improve our work packaging, so our field employees can get everything done with fewer site visits. This chart shows the consistent reduction in pole revisits over the last nine years – we intend to reduce this further in the future.



Business Overview

Essential Energy's Vision to **'Empower communities to share and use energy for a better tomorrow'** is underpinned by its purpose, to enable energy solutions that improve life. This is achieved by maintaining a safe and reliable network today; looking to the future needs of our customers; and transforming our business to ensure we meet those needs in the most efficient and effective ways possible.

Our Vision

What we want to be
Empowering communities
to share and use energy for a better tomorrow.

Our Purpose

What we stand for
To enable energy solutions that improve life.

Our Values

Our values set the parameters for how we behave, with each other and with you. They inform our decisions and how we do work. All employees are enabled and encouraged to demonstrate these values:

Make safety your own

Be easy to do business with

Make every dollar count

Be courageous, shape the future

Be inclusive, supportive and honest

Our Business Objectives

Our business objectives are the results we aim to achieve as a collective team. Essential Energy has a range of strategies that our people use to get there. Those strategies, together with business cases, implementation plans and supporting resources, enable the timeframes and specific details for these to be delivered.

Continuous improvements in safety culture and performance

Operate at industry best practice for efficiency, delivering best value for customers

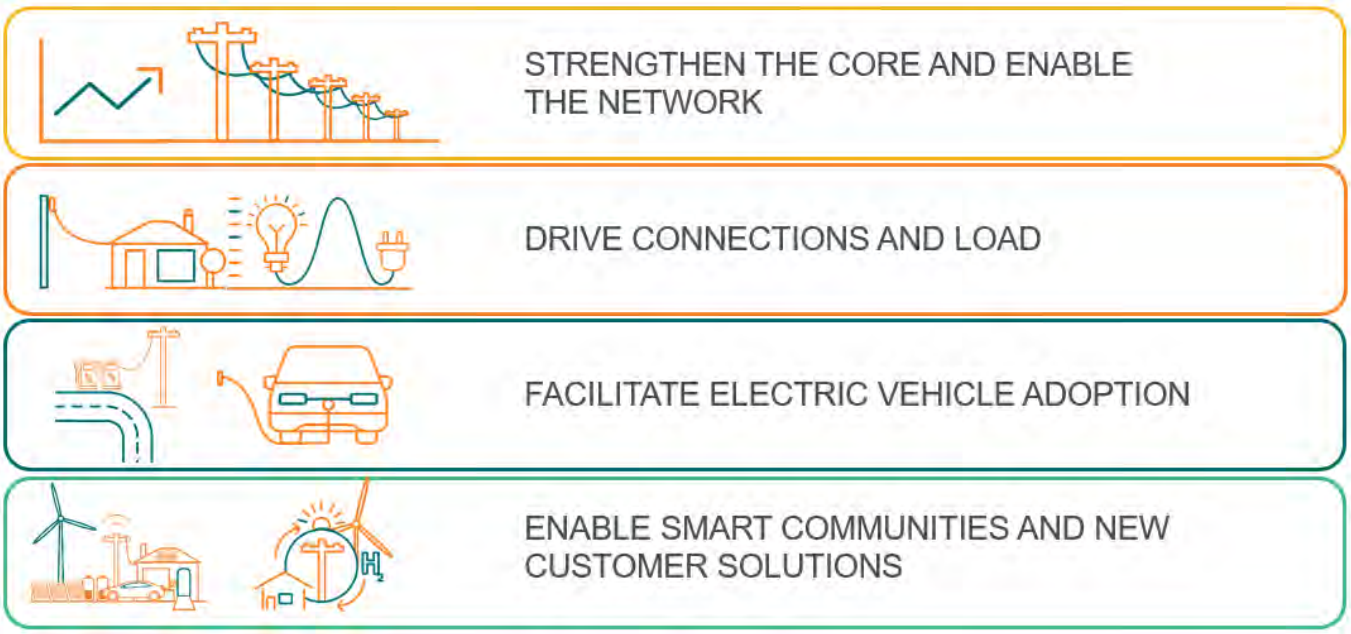
Deliver real reductions in customers' distribution network charges

Deliver a satisfactory Return on Capital Employed

Reduce the environmental impact of Essential Energy where it is efficient to do so

Our Strategic Pillars

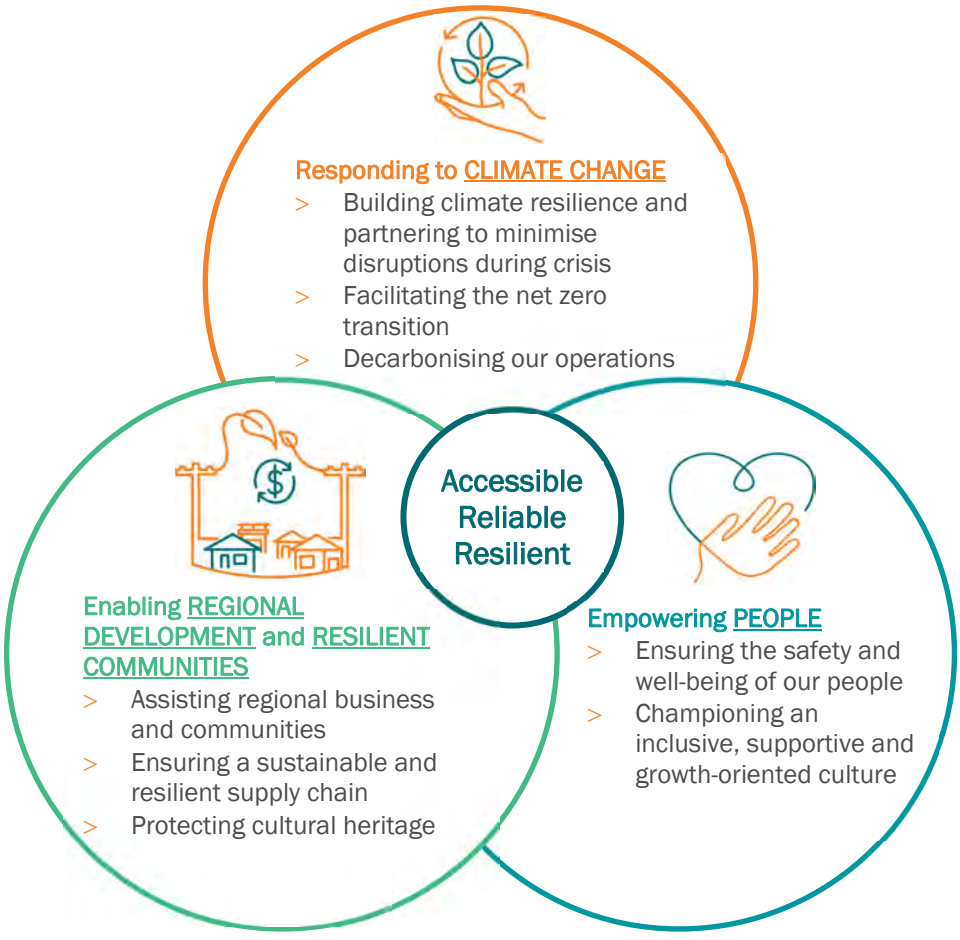
Our Corporate Strategy pillars are the roadmap for how we measure our success over time. They are the outcomes we intend to achieve, though the way we get there might alter over time based on continued customer input and feedback. Adapting for the future requires targeted investment in the network to change our data, systems, processes and technology, and to ensure our people have the capability to deliver sustainable, customer value-driven outcomes.



Our Sustainability Strategy

Our Corporate Strategy contains key sustainability themes – increasing network resilience and reliability, renewable energy uptake and facilitating EV adoption.

We have developed a Sustainability Strategy which leverages those themes and builds upon our strong foundation of existing sustainability-related activities. Through commitments and initiatives, we will respond to a broader scope of social, environmental, and economic risks and opportunities.



04

Our customer engagement

Chapter summary

- This Proposal has been developed in collaboration with you – our customers – and other stakeholders in the energy industry
- Robust discussion should incorporate flexibility and the ability to respond to changing circumstances – features we deliberately built into our engagement plan from the start
- We co-designed this Proposal with our customers and stakeholders so we're confident that the investments proposed not only meet business and regulatory requirements – they reflect your priorities too

You are essential to our business. By collaborating with customers like you, we can make the investments needed to better deliver the electricity services you want and need. You and our other stakeholders help shape our everyday business decisions, and your feedback has been integral to the development of this Proposal.

Refer to Appendix A for more detail on the outcomes of the discussions we held with customers and stakeholders.

To understand more about our everyday approach to engagement, see our Stakeholder Engagement Framework (**Attachment 4.01**).

Our everyday stakeholders

* A prosumer is an individual who both consumes and produces electricity

Our engagement principles

Through our engagement, we aim to:	
Curious	Engage early, using engagement activities that recognise the needs of our diverse customers, to build respectful, inclusive and collaborative relationships, and actively seek feedback to learn and improve
Accountable	Be transparent and set clear deliverables for measuring and evaluating the quality of our engagement and making those outcomes visible to stakeholders
Courageous	Be action-orientated and open-minded and act with integrity. Our business is continuously informed and shaped by our engagement.

Engagement for this Proposal

Planning

We engaged independent experts, Woolcott Research & Engagement, to facilitate our approach to this Proposal from the very beginning.

Our aim? To build on the industry-leading engagement that we undertook for our 2019–24 Regulatory Proposal.

Previously, we involved customers in our decision-making by letting them have a say on materials and options we had already prepared. Our ambition this time? To have customers and stakeholders co-design the materials and options we put forward. We used the Spectrum of Public Participation developed by the International Association of Public Participation (IAP2) to develop our approach.

The IAP2 spectrum of public participation

Our uplift aims and achievements for the 2024–29 engagement program

	2019–24 engagement program	Aim for 2024–29 engagement program	How this was achieved
 Design	We designed the engagement process.	We wanted more input from customers and stakeholders to shape the engagement approach and program.	We held a co-design workshop with stakeholders to identify key themes, topics and stakeholders, as well as appropriate levels of engagement. We met with our Essential Connectors (engaged customers) to get their thoughts on what worked well last time, what could be improved and the topics they thought were important to engage on this time around.
 Educate	We provided opportunities for participants to educate themselves on key issues and trade-offs.	We wanted more emphasis on creating informed, educated participants.	We included new and relevant topics for customers and stakeholders and offered pre-reading material ahead of forums by way of an online Virtual Room. We also added an additional phase to the engagement program.
 Independent	We provided information to participants.	We wanted independent experts to provide information to participants in addition to what we provided.	We responded to suggestions by our Stakeholder Collaboration Collective (SCC), our primary stakeholder reference group and had: > the relevant NSW government department present on the *NSW Electricity Infrastructure Roadmap* and *NSW Electric Vehicle Strategy* > Eurobodalla Shire Council presented their resilience experience of the 2019-20 bushfires.
 Collaborate	Participants engaged largely at the IAP2 'involve' level – they affirmed/endorsed the Proposal.	We wanted participants to engage at the IAP2 'collaborate' level – they co-design the Proposal.	We engaged on numerous topics at the 'collaborate' end of the IAP2 Spectrum of Public Participation.
 Multi-modal	The major component of the engagement was the deliberative forums.	We wanted to include a wider variety of approaches and methods of engagement.	We created dedicated stakeholder guidance groups for: > the Proposal – the SCC > the Tariff Structure Statement (TSS) – the Pricing Collaboration Collective (PCC). Our Virtual Room was updated for each phase of engagement. We conducted a radio and print campaign to encourage customers to have their say via the website ahead of Phases 2 and 4 engagement. We conducted a survey to inform decisions in Phase 2. We undertook deep dive sessions with a smaller customer group to collaborate on more technical aspects of the TSS and our strategy to transition to export tariffs.
 Stakeholders	Mainly customers	We wanted to involve a wider range of stakeholders.	New stakeholders included a youth group (16 to 18-year-olds), Accredited Service Providers, aggregators, retailers, councils, renewable energy developers, solar installers, new technology providers, critical infrastructure providers, the AER and the relevant NSW government department. We also undertook in-depth discussions with culturally and linguistically diverse customers including Aboriginal and Torres Strait Islander customer representatives. We conducted a series of dedicated workshops with councils over several months on public lighting issues. We engaged with aggregators, retailers and the relevant NSW government department in relation to our export tariff transition strategy.

Co-design workshop and online engagement

As part of the planning stage, we held a co-design workshop with 28 different stakeholder groups to identify the main themes for this Proposal, the key topics within each theme, the stakeholders we should engage with on each topic, and the level of engagement to be undertaken.

The workshop identified four themes that we adopted, which then shaped the layout of our Virtual Room.

Network of the future
Delivering the services customers want today and into the future

Resilience and reliability
How risk appetite shapes our investment decisions

Pricing
Fairness and affordability

Other essential services
Customer service and more

Our Virtual Room was accessible to customers and stakeholders throughout the engagement program. We also shaped our engagement sessions and our Proposal around these themes.

Our Virtual Room

Our primary stakeholder reference group

Those involved in our co-design workshop supported the idea of forming a primary stakeholder reference group. The result was the SCC. This group has guided our thinking, informed decisions, assisted in the development of engagement materials, directed us to form any dedicated sub-groups and identified when independent experts should present information to participants. The SCC first met in October 2021 and most fortnights after that.

Our engagement plan

An agile approach

Collaboration demands flexibility. Our engagement plan was designed with this in mind. It has been adjusted eight times to account for changes to the scope or the design and approach for engagement – far from seeing this as a failure, we see this as a sign of success. Robust discussion should incorporate flexibility and the ability to respond to changing circumstances. Our plan has allowed us to do just that.

Detailed reporting on our engagement activities

We have captured customer and stakeholder engagement conducted between July 2021 and November 2022 in the *How engagement informed our proposal* report (**Attachment 4.02**). The findings from each phase were shared with customers in each relaunch of our Virtual Room. Detailed engagement reports were also published on our Engagement Hub at the conclusion of each phase.

These independent reports are attachments to this Proposal and can be found at:

Attachment 4.03	*Planning Phase Engagement Report*
Attachment 4.04	*Phase 1 Engagement Report*
Attachment 4.05	*Phase 2 Engagement Report*
Attachment 4.06	*Phase 2 Engagement Survey Report*
Attachment 4.07	*Phase 3 Engagement Report*
Attachment 4.08	*Deep Dive Engagement Report*
Attachment 4.09	*Phase 4 Engagement Report*
Attachment 4.10	*Public lighting Survey Engagement Report*
Attachment 4.11	*Public lighting Phase 1 Engagement Report*
Attachment 4.12	*Public lighting Phase 2 Engagement Report*
Attachment 4.13	*Public lighting Phase 3 Engagement Report*
Attachment 4.14	*Public lighting Phase 4 Engagement Report*
Attachment 4.15	*Independent consumer report*

Recognition for our engagement approach

This Proposal aligns with the expectations for consumer engagement set out in the AER's Better Resets Handbook.

We are one of two businesses selected by the AER to participate in the inaugural 'early signal pathway' program. The early signal pathway aims to reward energy networks for genuinely engaging with consumers when developing regulatory proposals, so long as their proposed expenditure is relatively stable.

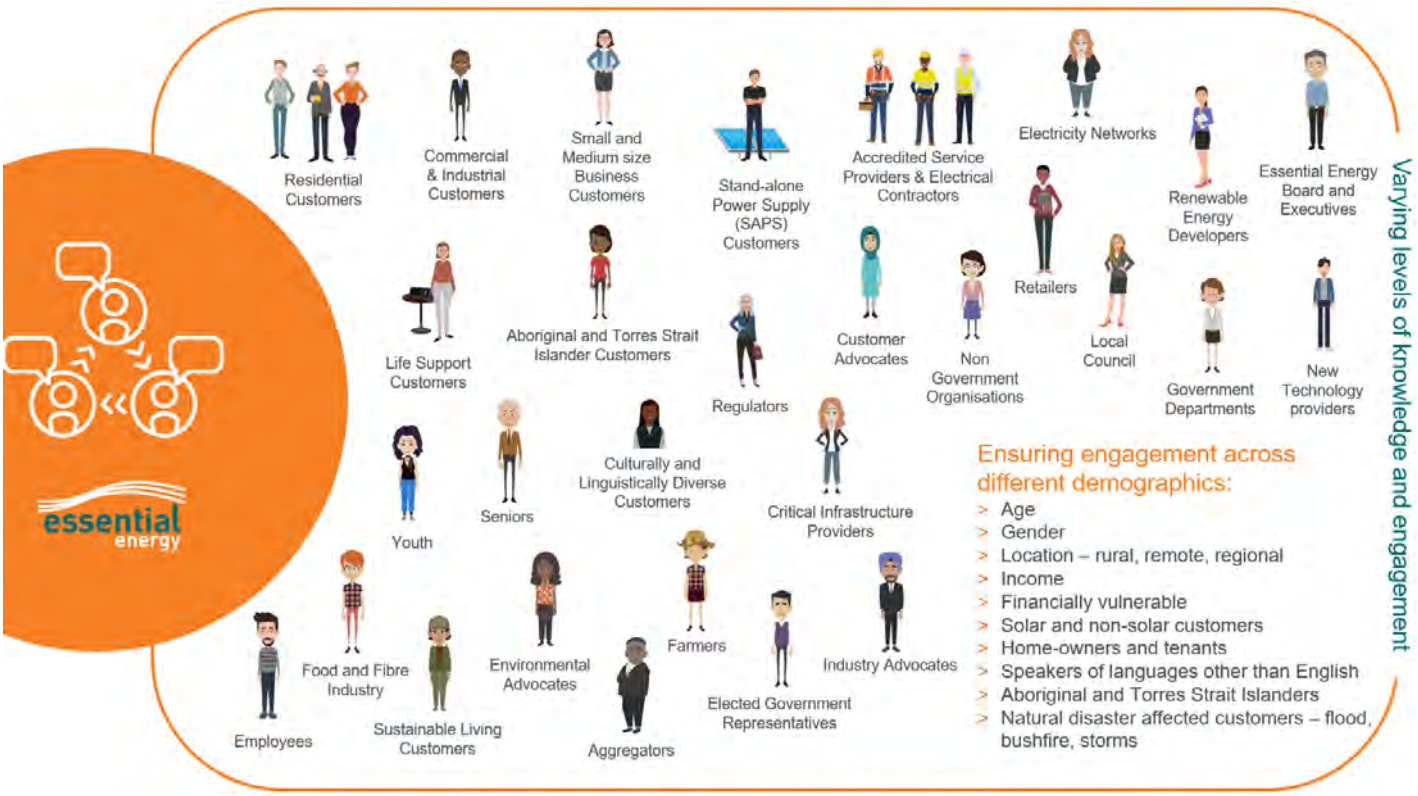
As part of this process, and to check we're on track with our approach, the SCC has appointed an independent engagement consultant to assess our efforts. The final report from this review can be found at **Attachment 4.15**.

Who we engaged with

We recognise you – our customers – are a diverse bunch and developed our engagement programs to ensure we heard from all of you. We also understand that you have varying levels of interest in, and knowledge about, Essential Energy and the electricity industry. This means our communication and engagement approaches were appropriately tailored to suit different levels of interest.

In a step up from our 2019–24 approach, we've specifically designed our engagement to include those of you from culturally and linguistically diverse and Aboriginal and Torres Strait Islander backgrounds.

We have engaged with a wide range of customers and stakeholders



Our engagement journey to date

Planning Phase
April–Sept 2021

- Co-design workshop with stakeholders
- Meeting with Essential Connectors
- Stakeholder Collaboration Collective (SCC) formed and first meeting held
- Customer Advocacy Group (CAG) meeting
- Joint workshop with other networks

8 connected customers and 28 stakeholder groups

- We engaged independent experts Woolcott Research & Engagement to facilitate our customer and stakeholder engagement program.
- We held a stakeholder co-design workshop with 28 different stakeholder groups to identify the influences to be considered in our review of our *Corporate Strategy* and the themes and topics for engagement, as well as who and how to engage for each topic.
- We held a meeting with our Essential Connectors (engaged customer representatives) to get their feedback on past engagement programs and input into the topic areas and engagement approach.
- We recruited members for our SCC and held the first meeting.
- Findings were shared back with stakeholders in the *Woolcott Planning Phase Engagement Summary Report*.
- We published a joint paper and participated in a stakeholder forum with other networks regarding service classification.

Outcome:
A leading-edge engagement plan

- Who we engage with
- What we engage on and
- How we engage with them

12 face-to-face hours
336 engagement hours

Phase 1 Understanding our customers
Oct–Dec 2021

- Launch of our Virtual Room
- 7 SCC meetings
- Customer testing of forum materials
- 7 deliberative visioning forums
- Group and in-depth discussions with customers and stakeholders
- 2 meetings with proponents around alternative tariffs for large peaky, load customers
- 2 CAG meetings

444 connected customers and 46 business partners

- We launched our Virtual Room to provide background information about our business and the engagement themes.
- We wanted to understand customers' priorities and their vision for the future network.
- We wanted to get customers' views on how we could measure customer service to inform the design of the Customer Service Incentive Scheme.
- We also wanted to check that the risks we consider when valuing projects align with customers' priorities.
- Findings were shared back with stakeholders in the *Woolcott Phase 1 Engagement Report*.

Outcome:
Informed customers and identification of what's important to them

- Their priorities
- Their vision for the future network
- Their views on project risks
- Their views on measuring customer service

30 face-to-face hours
1,105 engagement hours
219 visits to our Virtual Room

Phase 2 Setting the scene
Jan–April 2022

- Virtual Room updated
- 5 SCC meetings
- Customer testing of forum materials
- 10 deliberative customer forums (2 in each of 5 virtual locations)
- Group and in-depth discussions with customers and stakeholders
- Pricing Collaboration Collective (PCC) formed and first 3 meetings held
- Meetings with proponents for a trial battery tariff and alternative tariffs for large peaky, load customers
- CAG meeting
- Survey with 800 customers
- Public lighting survey and council forum
- Radio and print advertising inviting customers to 'have their say'
- Joint workshop with other networks

1,278 connected customers and 43 business partners

- We relaunched our Virtual Room to close the loop on Phase 1 engagement and introduce new material.
- We confirmed customers' priorities and their importance.
- We gauged customers' broad appetite for a range of investment options around managing power quality for the future network and building resilience to extreme weather events.
- We confirmed support for the key features of consumption tariffs and gauged support for the pace of moving to more cost-reflective tariffs.
- We introduced the concept of two-way prices (tariffs that charge for both consumption and exports) and gained an understanding of customers' thoughts and preferences in relation to how these should be transitioned and applied.
- Our survey obtained customers' preferences on topics that did not form part of the engagement forums.
- We recruited members and began meetings with our PCC.
- We surveyed councils about public services and held our first engagement forum.
- Findings were shared back with stakeholders in the *Woolcott Phase 2 Engagement Report*.
- We published a joint paper and participated in a stakeholder forum with other networks regarding network resilience in the face of a changing climate.

Outcome:
More informed customers and a clear understanding of their priorities as well as their views and expectations in relation to key service outcomes around reliability, resilience and the future network

46 face-to-face hours
2,712 engagement hours
Over 1,300 visits to our Virtual Room

Phase 3 Investment options forums and collaborative deep dive

May–Aug 2022

- Virtual Room updated
- 8 SCC meetings
- 3 PCC meetings
- Customer testing of forum materials
- 7 deliberative customer forums
- Group and in-depth discussions with customers and stakeholders
- Deep dive with 19 customers
- Meeting with retailers and aggregators
- Meeting with proponents around alternative tariffs for large peaky, load customers
- Meeting with relevant NSW government department
- 2 Council public lighting forums
- CAG meeting

446 connected customers and 31 business partners

- We relaunched our Virtual Room to close the loop on Phase 2 engagement and introduce new material.
- We made it clear that no level of resilience investment will prevent climate events from impacting the network and customers will continue to fund network recovery costs.
- We had customers and stakeholders debate the trade-offs of:
  - a slower versus faster pace of investment to improve the network's resilience to climate events.
  - overhead versus underground networks.
- We obtained customer preferences on investment options to:
  - increase network and community resilience to climate events.
  - enable the future network vision by investing in real-time monitoring and dynamic assets.
  - lower our environmental impact.
  - improve our customer service.
- We undertook a deep dive with a small group of customers to explain how pricing is a complement to alternative investments and to debate more complex pricing matters, including elements of the export tariff transition strategy.
- We met with retailers and aggregators to discuss the proposed export tariff transition strategy.
- We met with the NSW Department of Planning and Environment to discuss our proposed export tariff transition strategy.
- We held a further 2 public lighting engagement forums with councils.
- Findings were shared back with stakeholders in the *Woolcott Phase 3 Engagement Report*.

Outcome:

Identification of customer preferences and associated bill impacts for the various investment options that have shaped this draft Proposal

62 face-to-face hours
1,792 engagement hours
Over 380 visits to our Virtual Room

Phase 4 Testing the Proposal

Sept–Oct 2022

- Public launch of our draft Proposal to stakeholders
- Draft Proposal invitation for feedback
- Virtual Room updated
- Customer testing of forum materials
- 7 customer forums
- In-depth discussions with minority customer groups
- 4 SCC meetings
- 1 PCC meeting
- 9 Public Lighting meetings with councils
- CAG meeting
- Radio and print advertising inviting customers to 'have their say'

358 connected customers and 17 business partners

- We published and launched a Draft Proposal and Draft TSS for consultation with customers and stakeholders.
- We relaunched our Virtual Room to close the loop on Phase 3 engagement and outline our Draft Proposal and how it had been shaped by our collaborative engagement program.
- We engaged with customers and stakeholders to test that we had balanced the views we'd heard and fairly represented this in the Draft Proposal.

Outcome:

A Regulatory Proposal developed collaboratively with, and supported by, customers and stakeholders

39 face-to-face hours
1,312 engagement hours
Over 300 visits to our Virtual Room

AER submission January 2023

Ongoing

Our engagement program built on our previous knowledge and each phase of engagement built on the previous phase to distil customers values and preferences

ENGAGEMENT FOUNDATION

Existing knowledge and desktop review

2014-19 Remittal Proposal

OUTCOME
A leading-edge engagement plan - Who we engage with; what we engage on; and how we engage with them

PLANNING

Co-design workshop with stakeholders | Meeting with 'Essential Connectors'

PHASE 1: SETTING THE SCENE

Test relevance of existing customer priorities	Identify customers' preferred customer service (CSIS) measures
Test alignment of project risks with customers priorities	Develop customers' future network vision

OUTCOME
Informed customers and identification of what's important to them in terms of their priorities, risk assessment, customer service measures and the future network

PHASE 2: SETTING THE SCENE

Cost of living pressures and NSW Roadmap	Outline the emerging network challenge - power quality
Refine and rank customer priorities	Begin fairness discussions in relation to pricing
Customers views on reliability, their experience and priorities in extended outages	Introduce the concept of two-way prices
High-level pace of change and willingness to pay for resilience and smarter network	Identify preferences around locational and seasonal prices

OUTCOME
Participants informed at a higher level
An understanding of customers' views and priorities in relation to the key issues

PHASE 3: INVESTMENT OPTION FORUMS

Cost of living pressures and NSW Roadmap	Discussion for investments that deliver customers priorities in alternative ways
Outline our costs and how they are recovered from customers	Willingness to pay for varying levels of customer value and investment
Trade-off discussions around the pace of change to build resilience	

OUTCOME
Willingness to pay trade-offs are understood

Identification of program and pricing preferences

PHASE 3: COLLABORATIVE DEEP DIVE

Network solutions toolkit and customer outcomes	Preferred transition to two-way prices
Preferred default 'future proof' two-way tariff	Ideas for educating customers about two-way prices

Publish Draft Proposal and Draft TSS

PHASE 4: TESTING THE PROPOSAL

Acceptance of proposed CSIS measures and weightings	Should opt-out to flat rate be offered
Cost of living pressures and NSW Roadmap	Preferred transition to two-way prices
Willingness to pay for slightly increased investment	Should a grace period apply
Support for the proposed Sun Soaker two-way as the default tariff	Support to move to flexible connection agreements
	Shared our free export limit findings

OUTCOME
Refinements to deliver a Regulatory Proposal developed collaboratively and supported by customers and stakeholders

How we engaged

We've used a variety of channels and tools to share information and get your feedback. Planned face-to-face forums in phases 1 and 2 were held virtually because of the impact of COVID-19. Fortunately, we were able to conduct our subsequent forums and deep dive in person.

We shared information through graphics, videos, presentations, an online Engagement hub and Virtual Room, Zoom forums with virtual break-out rooms, face-to-face forums with table discussions, and reports. In the lead-up to phases 2 and 4, we ran radio and print campaigns encouraging you to have your say through the Engagement Hub. You could also share your feedback using phone, email or social media channels.

'They allowed the general public to put their honest opinions and past experiences into a subject that will affect all people across the country.'

Dubbo participant, Phase 2

'Well organised and structured and didn't matter what your opinion was, you could voice it.'

Taree participant, Phase 2

The Pricing Collaborative Collective

We set up the PCC in February 2022 as an additional stakeholder reference group to engage on more detailed pricing elements to design the TSS. It was established on the recommendation of the SCC, and the PCC met most months through to August 2022 with a final meeting held in October 2022.

Tariff Structure Statement deep dive

We also engaged more deeply with a smaller set of customers on the more complex aspects of the TSS on recommendation of the SCC. We held a Zoom information session ahead of a six-hour in person deep dive with a group of 19 customers to discuss how pricing complements alternative investments and to debate more complex pricing matters, including elements of the export pricing transition strategy.

'Structured format was excellent. Information session followed by discussion with participants was engaging.'

Inverell participant, Phase 1

Collaborating with other networks on the same regulatory cycle

We participated in two joint discussion papers, and in public forums around service classification and network resilience in the face of a changing climate. We worked with other networks to ensure the submissions received in response to these papers were uniformly interpreted to inform our Proposal.

We are confident that our engagement process has enabled us to create a Proposal that meets the needs, values and concerns of all our customer groups.

'Great mixture of people from different places, economic, renting, solar etc. Great hosts and people around to answer questions. Made for a fun day.'

Deep dive customer participant, Phase 3

'Being able to learn, hear directly from Essential Energy, contribute, it was great!'

Broken Hill participant, Phase 1

'Giving the customer a voice is imperative. These forums provide that'

Wagga Wagga participant, Phase 4

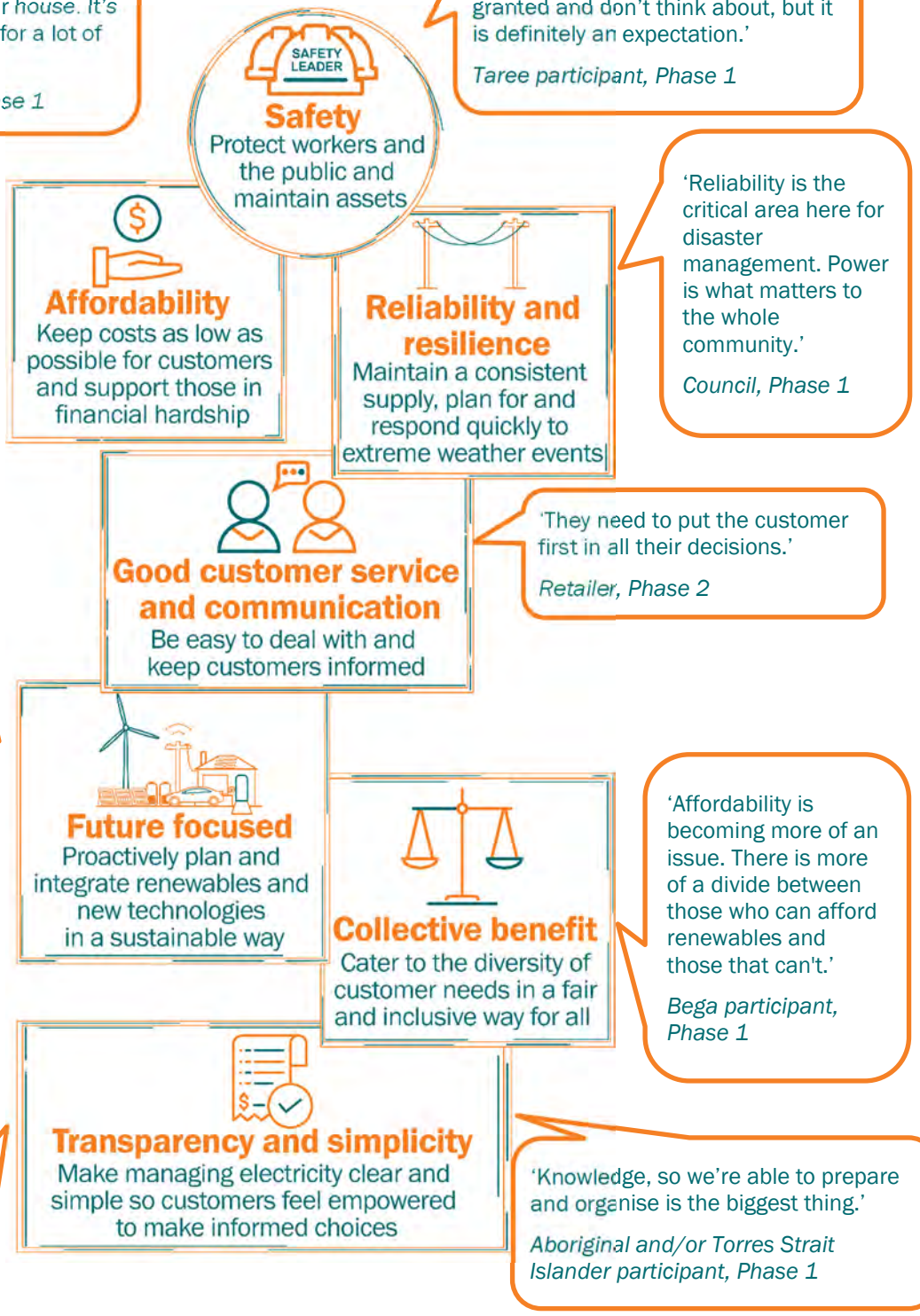
What matters to our customers

'Affordability is definitely a priority. As prices rise it becomes hard to prioritise what you want to run in your house. It's a big one to me and I think for a lot of other consumers.'

Broken Hill participant, Phase 1

'Safety is something we take for granted and don't think about, but it is definitely an expectation.'

Taree participant, Phase 1



'Reliability is the critical area here for disaster management. Power is what matters to the whole community.'

Council, Phase 1

'Now encouraging renewables is super important, with climate change and everything, it's on the forefront of people's minds. In the long term, I think that's more important.'

Youth participant, Phase 1

'They need to put the customer first in all their decisions.'

Retailer, Phase 2

'Innovative technologies create efficiencies and open up opportunities for renewables.'

Dubbo participant, Phase 1

'Affordability is becoming more of an issue. There is more of a divide between those who can afford renewables and those that can't.'

Bega participant, Phase 1

'Helping people understand the bill – how much electricity they use. People don't understand energy ratings. They need to be informed about how to use electricity better. I know there are brochures but a lot of them don't read them. Better in a community meeting where someone can explain things in person.'

Aboriginal and/or Torres Strait Islander participant, Phase 1

'Knowledge, so we're able to prepare and organise is the biggest thing.'

Aboriginal and/or Torres Strait Islander participant, Phase 1

'It is excellent. This is a really forward-thinking approach. If things were looked at through this lens going forward, then you would be on the right track.'

New technology provider, Phase 2

Future network vision

Technological changes and the increasing shift to renewable energy are changing the way you and other customers use our network. We need to adapt to ensure we can deliver on your priorities and provide the services you will expect in the future, at an affordable cost. This shift will not be achieved in one five-year regulatory period – instead, this Proposal should be seen as a stepping stone to a future that is 10 to 15 years away.

As part of Phase 1, engagement participants created a vision for the future of the network. This vision underpinned the narrative around the need to begin building for the network of the future in the subsequent phases of engagement.

Engagement participants were excited by this vision, but were keen to ensure all customers benefited from these changes, especially those who can least afford or cannot access new technologies. Concerns were also raised around the availability of rare minerals required for many new technologies and how the associated waste would be managed in the future.

‘I’m thinking about equity and the possibility of rental properties that don’t have solar. I’m living on a street at the moment where we share the solar power that goes back to the community battery.’

Bega participant, Phase 1

“I think the microgrids are very exciting. A wonderful way to go.”

Broken Hill, Phase 1

‘Solar panels and batteries on houses everywhere. If only it was that easy.’

Inverell participant, Phase 1

‘I would like to see the technology for EVs to improve to the point where it’s a possibility and a probability for rural people, but I don’t see that being feasible.’

Inverell participant, Phase 1

‘Buy, store and resell local energy – that’s the future.’

Solar installer, Phase 1

‘You’ve got to move electricity from the generators, so there will need to be poles and wires.’

Inverell participant, Phase 1

‘Grid-scale batteries would be extremely helpful for us.’

Ballina participant, Phase 1

‘In 10–25 years a lot of rural properties, almost all of them, will be standalone.’

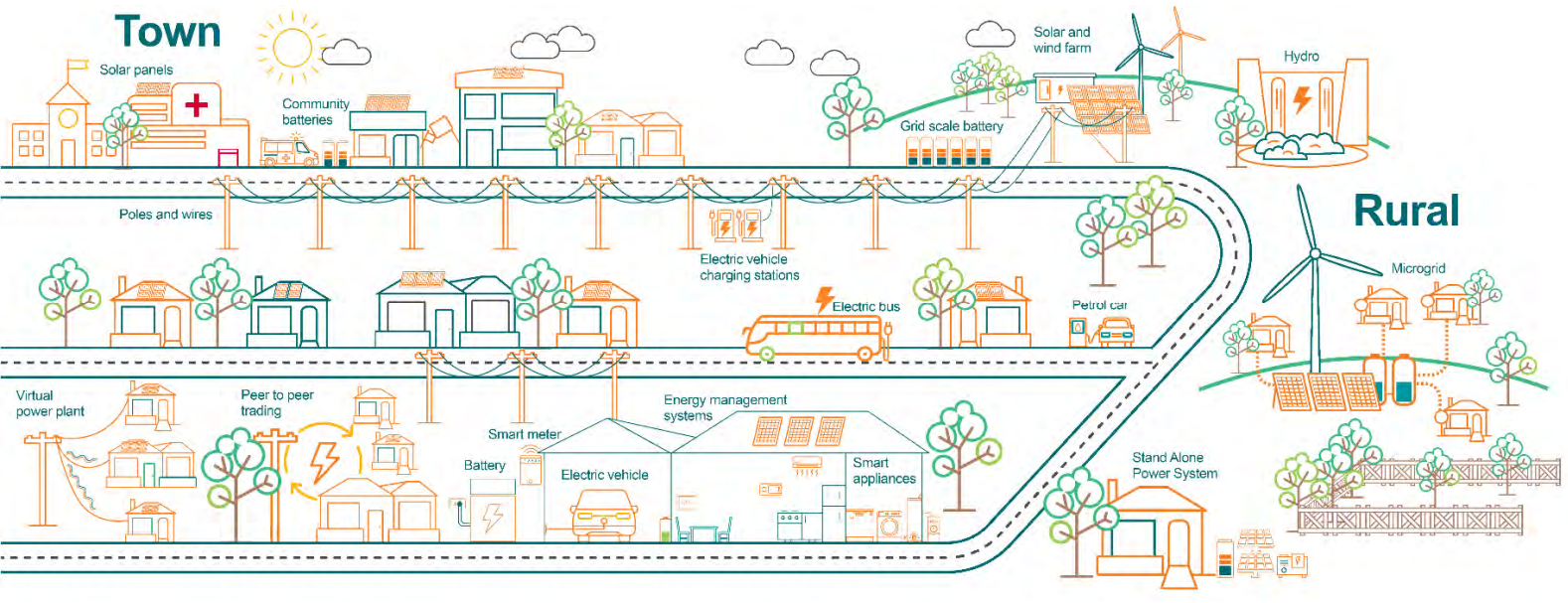
Bega participant, Phase 1

‘As we progress and there will be more people storing – what happens to the person who can’t afford it? Where does the cost go of maintaining the grid?’

Council, Phase 1

‘Consideration needs to be given for the end of life for these technologies. Many components [aren’t] recyclable or reusable or [are] toxic.’

Dubbo participant, Phase 1



Our Proposal and TSS represent the views of our customers and stakeholders

86%
of customers supported the proposed investments despite increases in interest rates and inflation

'I still don't like the Sun Soaker two-way, but that won't change. But yeah I understand why they're going to introduce it.'

Bega participant, Phase 4

'I'm happy with it, it all makes sense. It's been good going all the way along and I think it matches what I expected. It's good that they asked our opinion.'

Aboriginal and/or Torres Strait Islander participant, Phase 4

96%
of customers agreed that customers' views had been taken into account in the Draft Proposal

'I think the process is involved – it is a step-by-step process, we may not agree with everything, it's ok because the process has been followed. They can't just cater for me, they have to cater for everybody.'

Inverell participant, Phase 4

'I'm happy with what's going to be put forward and seeing our feedback reflected in how they've identified things. It's very complex and work has been put in.'

Inverell small business participant, Phase 4

90%
of customers agreed that the Draft Proposal reflected their views and priorities

'We see the same Essential Energy people each time so we can see how it has evolved…there's evidence they have listened to and developed what we have thought. We have been taken seriously.'

Wagga Wagga participant, Phase 4

'There wasn't anything in there that hasn't been mentioned… and it's transparent. People might be mad that the price is changing but it was transparent and they explained where it was going.'

Broken Hill participant, Phase 4

97%
of customers agreed that Essential Energy had collaborated with customers to make key investment and pricing decisions

'I feel that my community's views have been taken into account and I have been engaged throughout the whole process.'

Culturally and linguistically diverse participant, Phase 4

'It reflects the customers' views wholly. Yes, I'm happy with the engagement process, it makes me feel like a shareholder.'

Inverell small business participant, Phase 4

'I wondered at first if it was just a tick box, but hearing that it's helped them – I'm surprised, it's Interesting to see that they have rejigged things.'

Bega participant, Phase 4

'It is so good to be asked – they did listen to what we said, I think they covered everything'

Broken Hill participant, Phase 4

98%
of customers agreed that events like our customer forums were a good way of consulting with the public about issues

'I think the way that the information is presented is really good because you get to see the different options, you had time to discuss and then make your own vote… you can see the personal votes of the room, and see if we are on the same page.'

Taree participant, Phase 4

'I think they've done extremely well – from the very first forums to the last sessions they've sort of all brought it together to make sense. They've got opinions from lots of different households and different areas, not just one demographic.

Dubbo participant, Phase 4


A great discussion on future investment

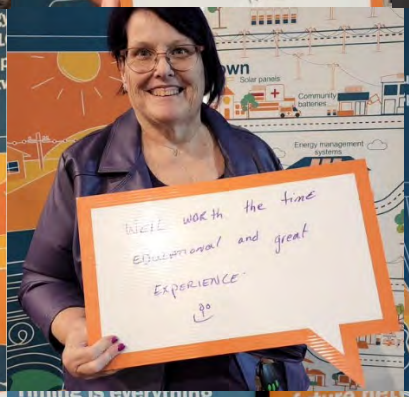

Very informative Great to hear where we are heading!

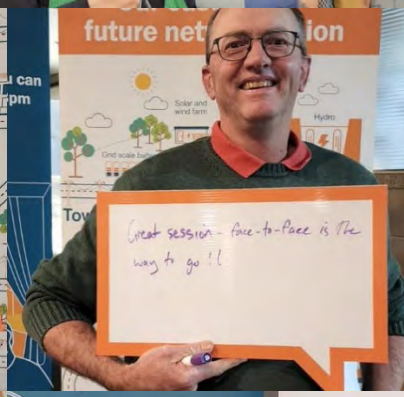

Great fun. Well worth the Time!

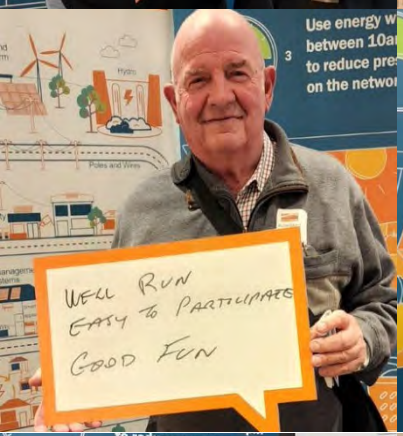

Good Job

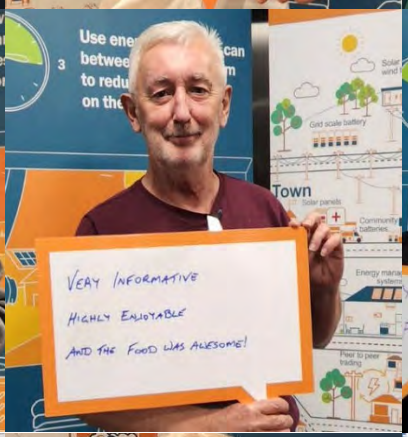

Thank you for listening!


Very well run- Organized and Punctual


Well worth the time Educational and great EXPERIENCE


Great session - face-to-face is the way to go !!


WELL RUN EASY to PARTICIPATE GOOD FUN


VERY INFORMATIVE HIGHLY ENJOYABLE AND THE FOOD WAS AWESOME!


YOU GUYS ARE FANTASTIC

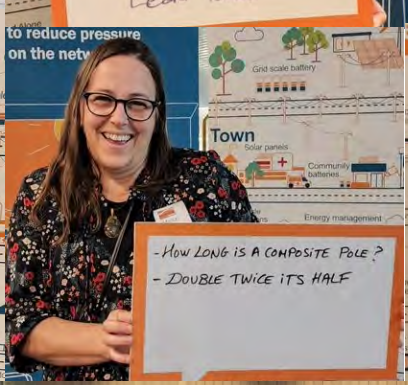

Great Presentation Ian

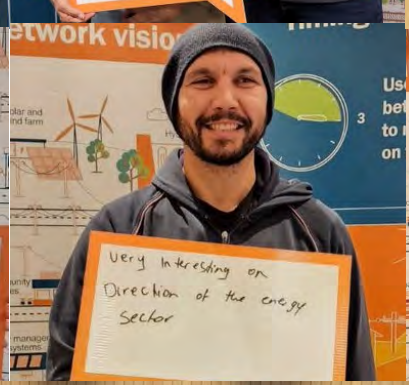

Loved the session! U'll be back


Great facilitator Lots of laughs & loads of Information Least loads


INFORMATIVE INTERESTING THOUGHT PROVOKING FROM ONE JUSTINE TO THE OTHER


Thanks for the information & the opportunity to give feedback!


- How long is a composite pole? - Double twice its half


Very Interesting on Direction of the energy Sector


Very Well Run Informative Great Captain Melissa

05

Our revenue requirement

Chapter summary

- Our proposed revenue requirement balances our need to invest in and maintain our network today with managing the rapid transition to the network of the future
- This will help us deliver a safe, resilient and reliable network while meeting customers' expectations regarding electricity affordability, now and in the future
- Using the AER's draft 2022 Rate of Return Instrument with recent placeholder interest rates, we propose to increase revenue in real terms by 2.97 per cent a year over the 2024–29 regulatory period

Our revenue requirement

We are a regulated business so we estimate how much revenue we will need to generate to cover costs, invest for the future and provide a return to our shareholder, the NSW Government. The revenue included, and which we need to recover through network charges, is the modelled outcome of our expenditure plans that we engaged on with our customers and stakeholders.

The AER will assess our Proposal and determine whether our projected revenue is appropriate.

The total standard control revenue we propose to recover from customers over the 2024–29 regulatory period is $5,913 million (real June 2024).

$ million, real June 2024	2024–25	2025–26	2026–27	2027–28	2028–29	Total 2024–29
Proposed annual revenue	1,114	1,147	1,182	1,217	1,253	5,913
Proposed annual real revenue change	2.97%	2.97%	2.97%	2.97%	2.97%	

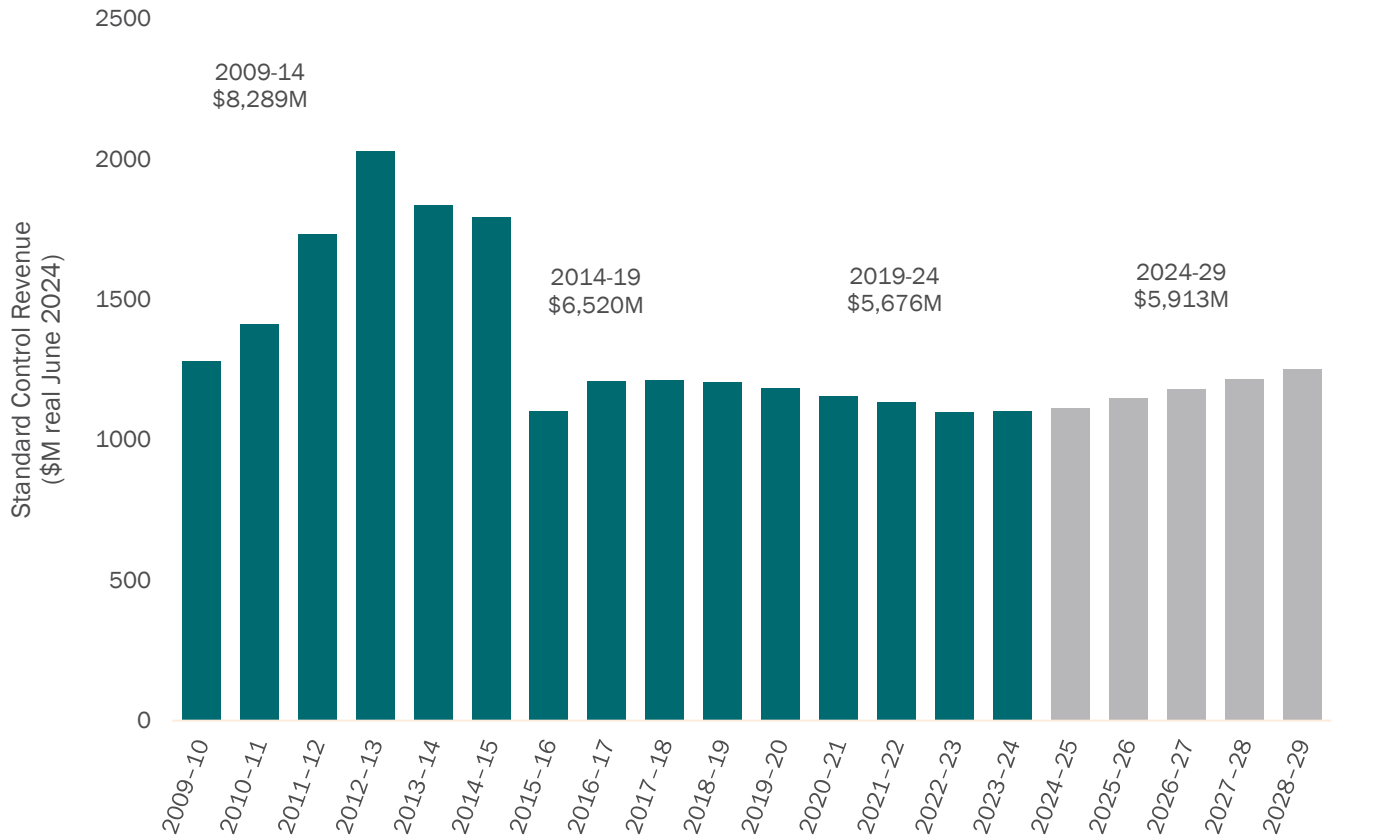
Numbers may not add due to rounding

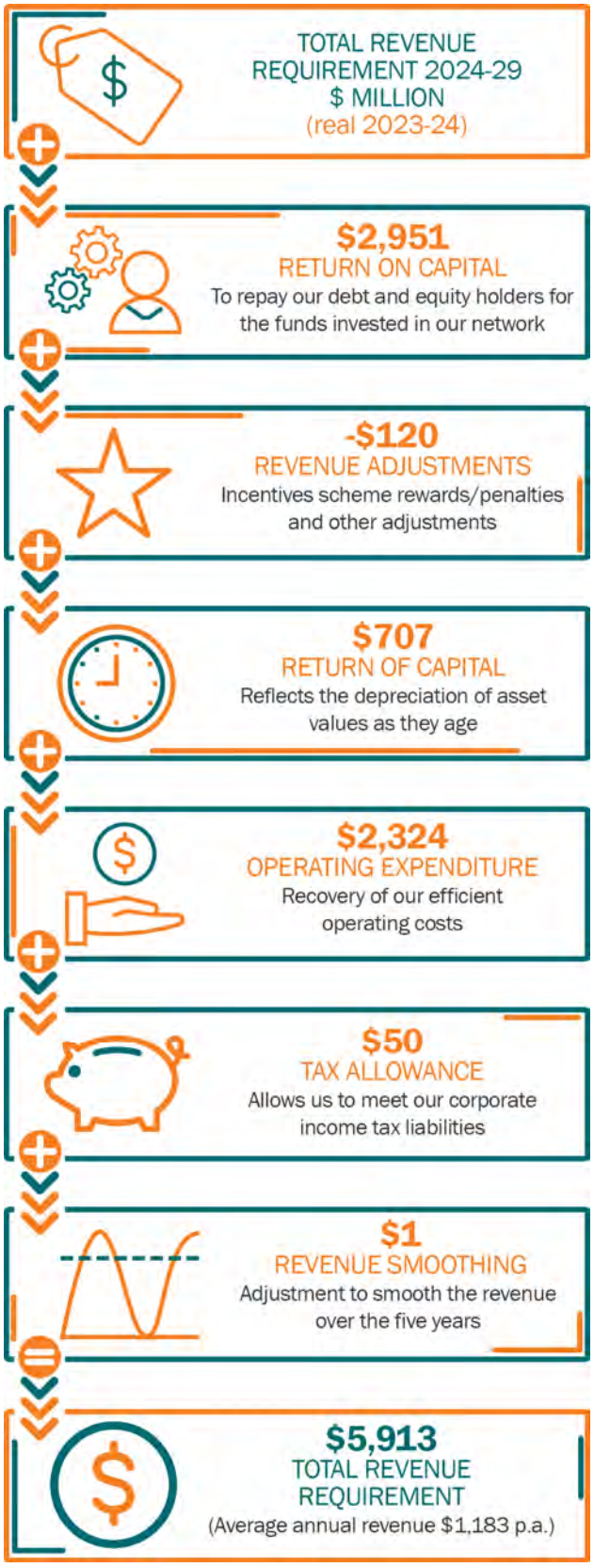
Our proposed standard control revenue for 2024–29 is $237 million higher than our 2019–24 forecast.

We calculated this requirement in accordance with the NER, using the AER's prescribed models and recent placeholder interest rates. Further information is set out in **Attachments 5.01 to 5.09**.

The chart below illustrates the actual standard control revenue received by Essential Energy up until 2021–22 and our forecasts through to 2028–29. Revenue for the 2024–29 regulatory period is forecast to increase due to a higher return on capital, and higher operating expenditure recoveries (including an allowance for debt raising costs). These are partly offset by revenue adjustment penalties for overspending in 2019–24, lower returns of capital (depreciation) and lower tax allowances.

Standard control revenue by year





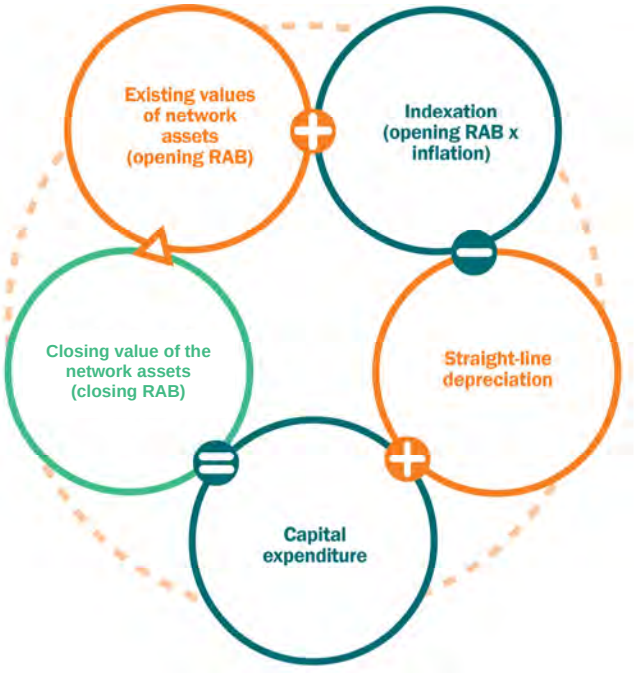
How we calculate the revenue we need

To work out our revenue requirement for a regulatory period, we use a number of inputs. The main ones are operating expenditure, capital expenditure, rate of return and the regulatory asset base (RAB). Then we combine them using AER models.

Under the NER, this is known as the 'building block' approach. The components are added together to determine the revenue we need to recover our costs, meet our debt obligations and provide a return to our shareholder.

Our expenditure levels can be a little lumpy, depending on when projects start, so we 'smooth' our revenue requirement to help limit variations in customer prices. We then use customer consumption forecasts to establish the prices we need to charge to reach our revenue requirement. How we convert our revenue into prices is discussed in **Chapter 12**.

How we calculate our regulatory asset base



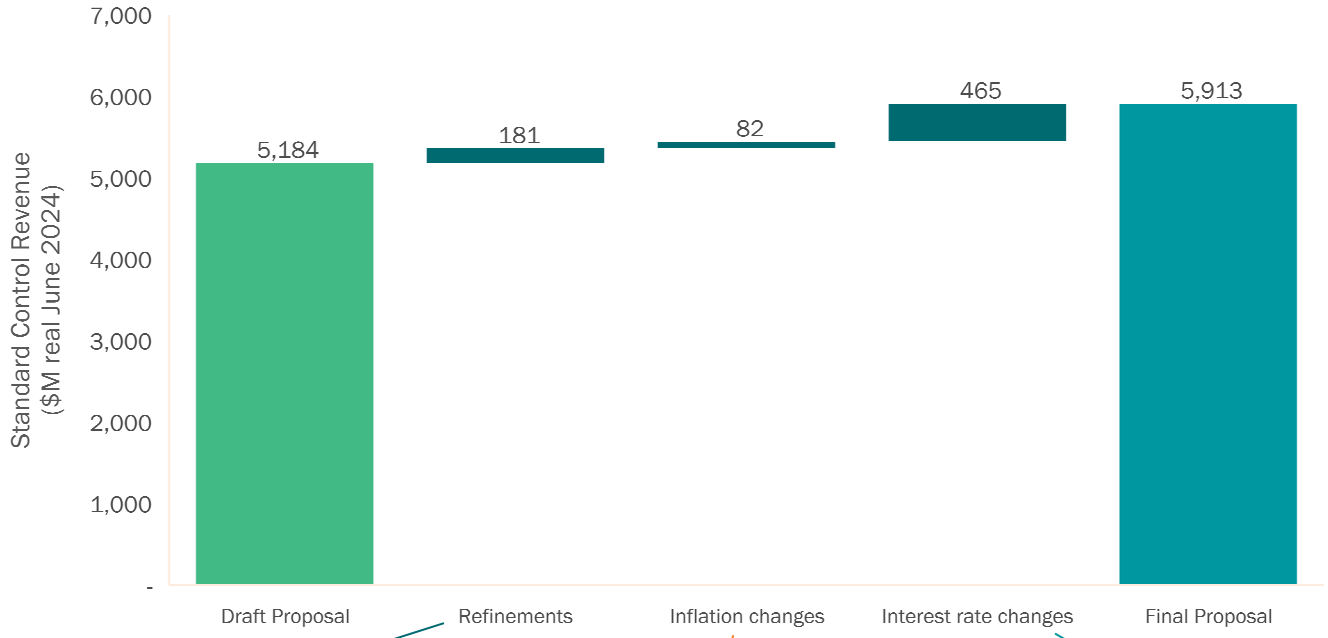
Further information

For further information about our revenue requirement components and the models used to derive them, please refer to **Attachments 5.01 to 5.09**.

In the months since we prepared our Draft Proposal, there have been external market changes which have meant that the Proposal now includes higher revenues – which unfortunately means higher network charges for customers. The majority of the increase relates to higher inflation and interest rates which impacts our RAB and the cost of our funding.

The chart below shows the material changes from our Draft Proposal.

Material changes in Standard Control Revenue from Draft to Final Proposal



Refinements - we have reflected feedback from the AER and other stakeholders, and also included more accurate cost inputs and modelling outcomes. Most of our proposed investments have remained largely as we outlined in the Draft, apart from reducing some resilience expenditure, following receipt of our Climate Change Report (see Chapter 6) so that only cost-efficient investments were included.

Inflation forecasts have increased from 6.0% to 7.8% for 2022–23 and from 3.3% to 4.3% for 2023–24. These increases affect the value of our RAB as it is indexed in line with inflation.

Higher interest rates have increased funding costs. This results in a higher return on capital requirement.

The headline rate of return for year one of 2024–29 has moved from 5.11% to 5.65%, with the average forecast applied over the five years now 5.71%, up from 4.86% as used in our Draft Proposal.

06

Risk appetite, reliability and resilience

Chapter summary

- Severe bushfires, floods and storms highlight the need for our network to withstand large and disruptive climate-related events
- Improving network and community resilience is a key customer priority in the 2024–29 regulatory period
- Our proposed investments in the network are in line with your priorities – safety, reliability and combatting bushfire risk

Risk management

All electricity networks pose safety risks. Some of the most obvious are electrocution (of a member of the public or an Essential Energy worker), property damage or the potential for electrical fires. In a dry spell, powerlines can also spark bushfires, and power outages at any time can pose serious health risks – those dependent on respirators and other medical equipment rely on stable energy supplies. As do the refrigeration systems that keep our food fresh, and the water pumps and purification systems that keep our water running and drinkable.

The safety of customers, communities and staff is our highest priority when making asset and network management decisions. Safety is also a priority for you (see **Chapter 4 – Our customer engagement**) but you've also told us that affordability and reliability matter. To help mitigate the increasing severity and frequency of extreme weather events, you told us you want us to improve network resilience and invest to help our communities improve their resilience planning and their ability to recover following these events.

Understanding your concerns has informed our overall approach and tolerance to risk – or our risk appetite. Based on the above views, we make trade-offs and set risk-based targets.

> 'As consumers we assume that Essential Energy is doing everything to keep the community and their workers safe. But for me I think safety has to be above everything. I would say, we take safety for granted.'
>
> *Broken Hill participant, Phase 1*

Risks we consider

Taking a risk-based approach improves value for our customers, We currently consider five risks when we are making our investment decisions:

- Safety
- Reliability
- Bushfire starts
- Ecology and heritage
- Customer experience.

> 'Safety is inherent in whatever you do. EE should be looking at how to get better performance out of the network (i.e. reliability).'
>
> *Inverell participant, Phase 1*

We spoke to customers about these risks to ensure that they were still appropriate for the future (see **Appendix A – Summary of engagement outcomes**). In response to their feedback, and to support our future investments in network resilience, we are looking to include climate change as a new risk. We have analysed the potential impacts of climate change on the network and included the results in relevant investment cases supporting this Proposal. We also plan to incorporate climate change risks more formally into our investment decision making to ensure we continue to improve the resilience of our network in the longer term.

> 'They need to think about resilience and the impact of climate change on the life of that asset.'
>
> *Council participant, Phase 1*

Our approach to managing risk

Our risk framework is based on relevant industry standards, such as ISO 31000, recognised good practice, for example monetising risk and the use of established tools like Copperleaf® C55. This ensures we can better manage risk in line with customer expectations. Practically, this means prioritising investments that achieve measurable benefits along with a reduction in risk, while taking into account available resources.

This Proposal relies on a combination of 'top-down' and 'bottom-up' modelling. Bottom-up models help us to decide which projects to support and how much to spend on them to achieve safety, reliability and affordability for the network. They set the upper limit on how much we can invest – helping us to weigh up a risk against the costs and benefits of mitigating that risk, and the impact our spending has on the prices you pay.

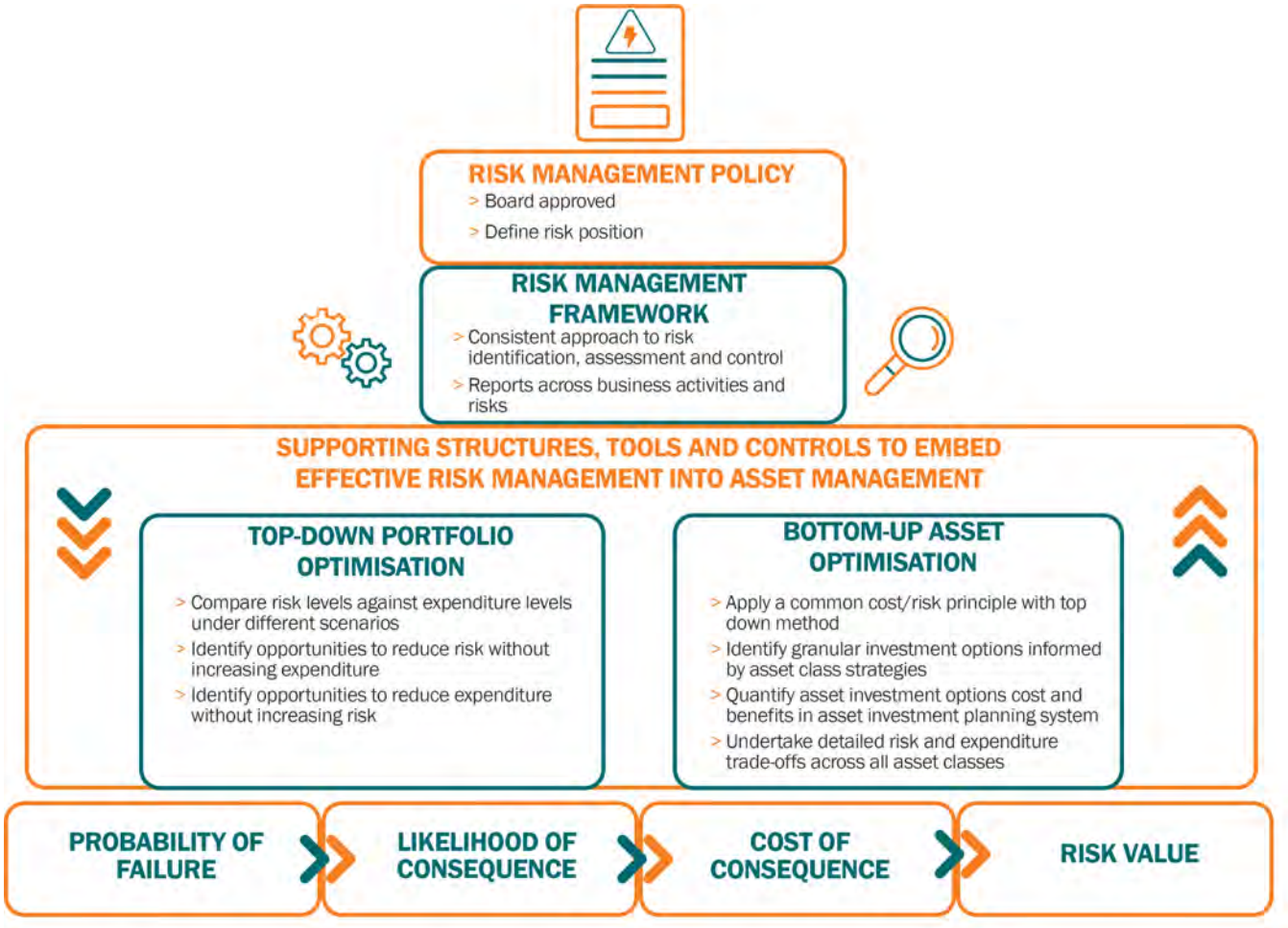
The top-down approach identifies specific options for alternative asset-level designs, inspection, maintenance and replacement regimes. These options are then ranked by cost and benefit, to inform decisions around prioritising, deferring or cancelling programs of work.

Our future investment in the network has been optimised using the importance of network risks identified by our customers to:

- maintain safety outcomes
- maintain levels of overall reliability
- reduce bushfire ignition risk.

For composite poles and undergrounding we have overlaid a climate change lens to capture future risks caused by extreme weather events. It should be noted that our network risks vary by region and by asset type.

Our risk management framework



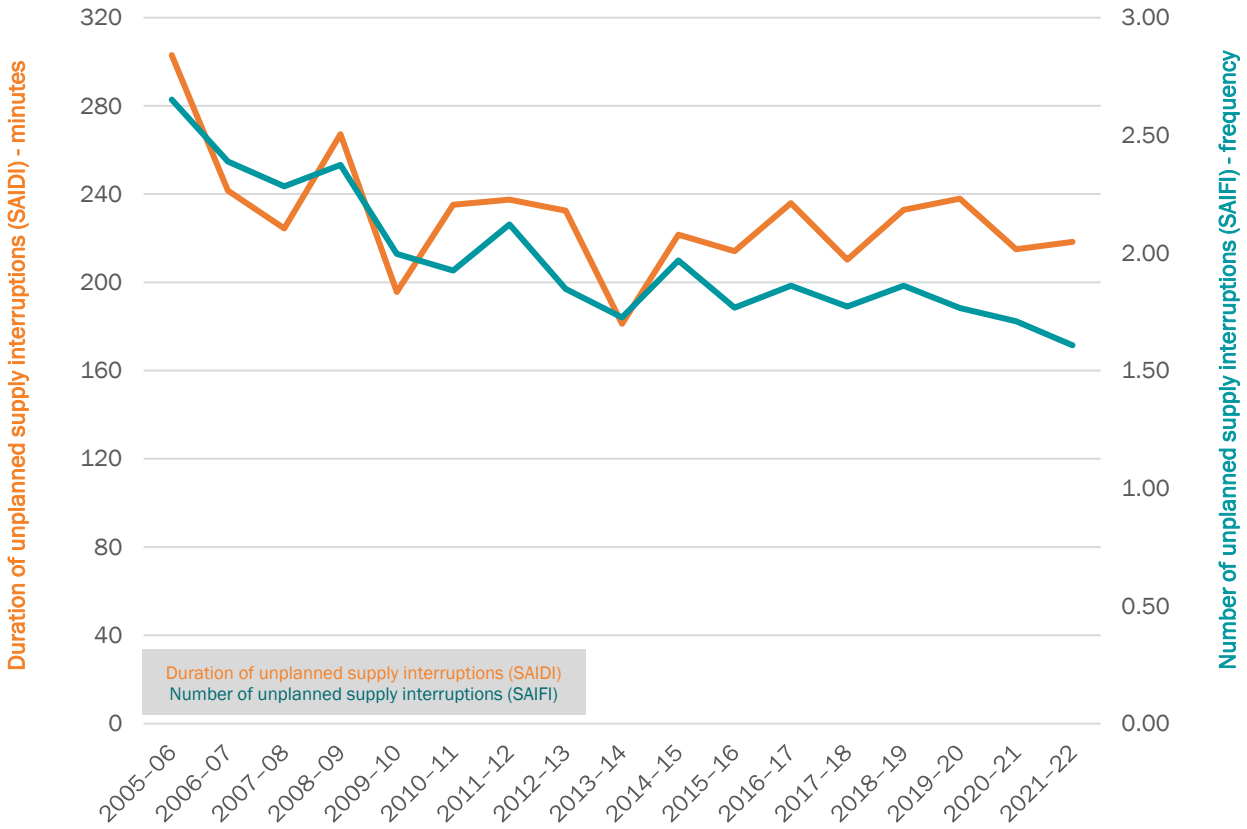
Historical reliability performance (normal operating conditions)

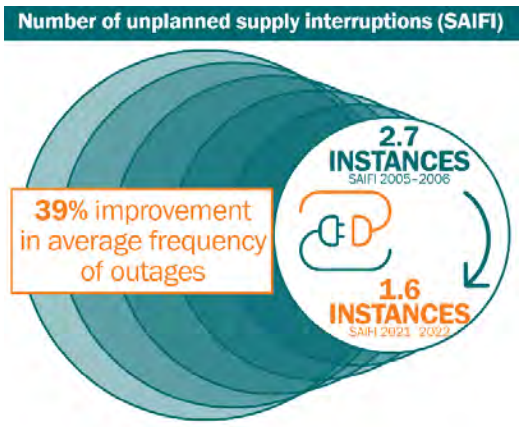
We define reliability as how well we deliver power to you under normal operating conditions. Our average availability of supply is around 99.96 per cent (excluding major event days).

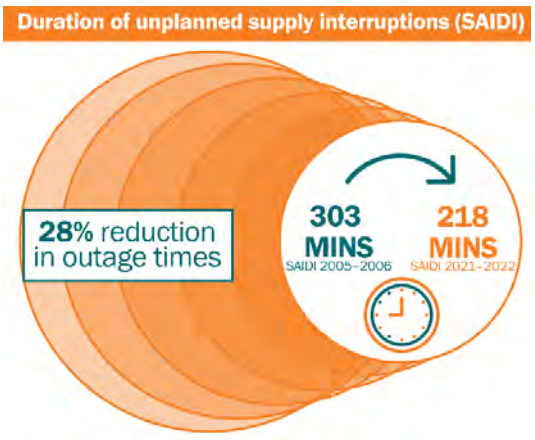
Electricity reliability performance is measured by the frequency[3] and duration[4] of supply interruptions. It excludes major events and other specified outages which are outside of our control.

> 'The balance between reliability and resilience and future focused is the key thing.'
>
> *Deep dive customer participant, Phase 3*

The diagrams and charts below show that our overall reliability trend is improving. However, as we illustrated in **Chapter 3 – About Essential Energy**, the impact of those increasing numbers of excluded events means that we need to do better in making our network more resilient, so you can continue to rely on a steady and safe electricity supply. The chart below shows the average duration and frequency of outages has improved significantly since 2005–06.







[3] System Average Interruption Frequency Index (SAIFI)

[4] System Average Interruption Duration Index (SAIDI)

‘Reliability is up there, you need power every day to live. More so than ever, people are working from home on devices, and they need that undisrupted supply.’

Bega participant, Phase 2

‘Loss of power has a massive impact on council operations, on water, and it has also had a huge commercial impact. It has been so hard to get our community back on its feet. Businesses trying to operate without power is so difficult.’

Council, Phase 2

‘For disabled people like me, an outage of three hours would be a real problem.’

Broken Hill participant, Phase 2

‘I live on a farm, so I rely on electricity for my water because we’re on tanks and I have to feed my livestock especially in summer that could be a big issue. At least if you’re in town you can get water but because I’m out of town I can’t get water, so as soon as the power’s gone I’m affected.’

Ballina participant, Phase 2

We have consistently heard from you that you want our network to be reliable.

Reliability is primarily a function of how much we spend on maintenance. To meet our reliability goals, we:

- procure and install assets only where they are expected to meet minimum standards of reliability
- routinely inspect, maintain and, where necessary, replace our assets
- review unplanned supply interruptions and reliability issues for patterns and trends so we can consider whether changing our inspection and maintenance controls would improve the future reliability of our network.

A significant proportion of our direct operating expenditure relates to managing vegetation, conducting routine inspections, and undertaking planned and unplanned maintenance. All of these activities are aimed at maintaining a reliable network.

Despite the variations in reliability performance, the majority of participants at our forums were satisfied with the reliability they received, with 93 per cent stating the supply was reliable.

The feedback we received was that you don’t want to pay more to improve the reliability of your own electricity supply. However, you are happy to continue to pay 10 cents per quarter to invest in initiatives that improve reliability for our worst-served customers. Reflecting this feedback, we will continue the Worst-Served Feeder Segment program and focus on long rural feeders. This has been included in our capital expenditure forecasts (see **Chapter 10**).

Climate-related threats and extreme weather events, such as floods, can affect reliability, so measures that enhance resilience will also enhance reliability.

Ensuring our network is resilient and reliable

Building network and customer resilience

Recent severe bushfires, floods and storms have highlighted the importance of a network that can withstand and recover from large and disruptive climate-related events. From our experience, we also know that we have a role in assisting our communities.

But resilience isn't just about the changing climate. The world's efforts to decarbonise require electrification on a grand scale – ultimately everything from the cars we drive to our cooktops need to be weaned off fossil fuels like oil and gas. However, increased electrification requires an increasingly robust network, with ever-increasing levels of resilience.

Why resilience is important

There is already greater reliance on electricity than ever before

More and more essential services rely on electricity. Petrol pumps won't operate, telecommunication towers can't operate for extended periods, water can't be filtered and pumped to households, and sewage can't be pumped and treated without electricity.

There is also more reliance at an individual household and business level. Think of how much more you use the internet or your mobile phone, heating and cooling than you did even 10 years ago. Add to that, new technologies like EVs, and you can see that an extended electricity outage today has greater consequences for communities than it did 25 years ago.

'If your phone runs out of battery you can't call an ambulance – it's a huge roll-on effect because we're more and more dependent on electricity.'

Dubbo participant, Phase 2

There will be an increase in consumer energy resources

As the wider community becomes more aware of the risks that climate change poses, more of us are investing in solar panels. Some of us are even purchasing batteries and EVs. This means the electricity system is more distributed – we're producing more electricity at or near where it is used, rather than relying on energy being carried to us on powerlines from distant power stations. We're also putting more energy back into the network and relying less on coal and gas for generation. The benefits of these CERs require our network to be operating.

There will be more extreme weather days in the future

With global mean temperatures increasing, extreme weather events are expected to become more frequent and more severe. This increases the likelihood of such events impacting our network – in short, you are likely to experience more frequent and longer power outages. Trend increases from the 2019–20 bushfires and the North Coast floods were shown in the outage duration chart in **Chapter 3 – About Essential Energy**.

Our network assets typically last 40 to 50 years. It is therefore vital that when making decisions today, we consider how our climate might change over the next 40 to 50 years, not just the next 5 to 10 years.

'This certainly reflects what we want as it touches on the sustainability perspective in terms of resilience – protection against severe weather events and a more proactive narrative around facilitating innovation around local energy sharing and renewables.'

Council participant, Phase 1

Currently, we are largely reactive when it comes to extreme weather events like bushfires and floods – after the event has passed, we come in and repair the network.

What we currently do for customers and communities during extreme events

Co-ordination with emergency services

Customers and community communications during an extreme event

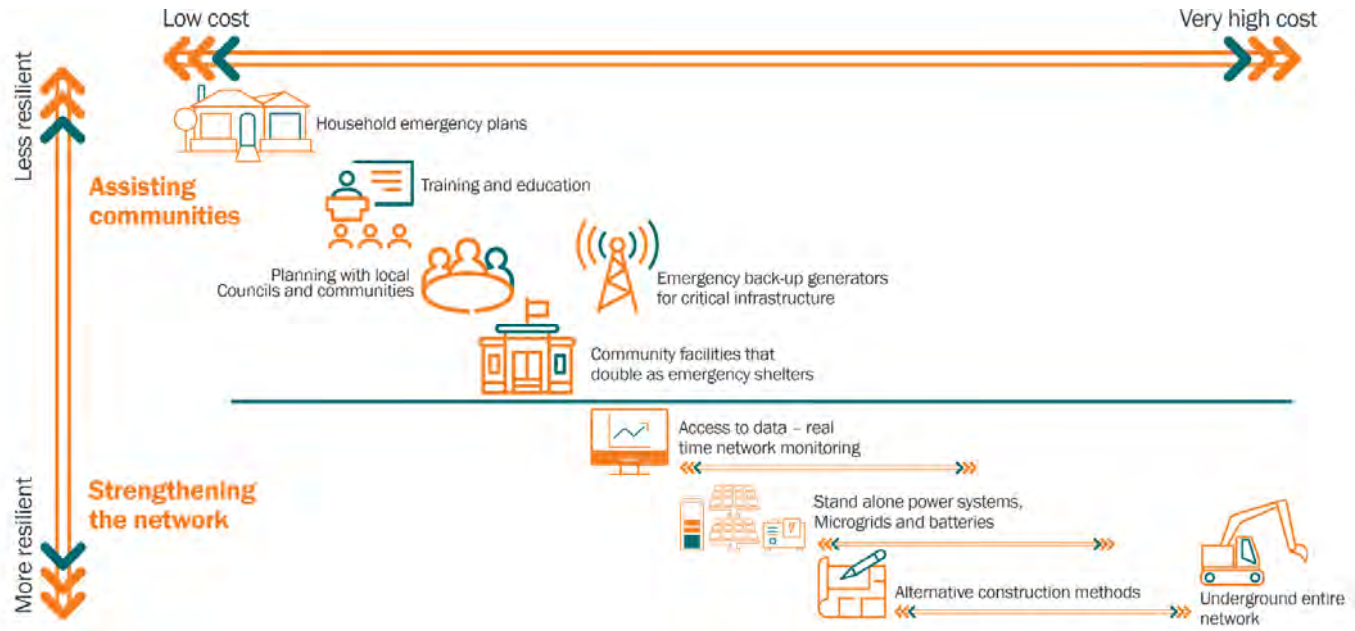
Mobilise resources from other depots

Share response with other networks

Provide small mobile generators and fuel vouchers

But there are opportunities to be more proactive in preparing for – and responding to – extreme weather events than we are today (see diagram below). Each of these approaches has an array of effects – on both individual customers and network resilience. They also have different associated costs.

A variety of options for managing network resilience



What customers and stakeholders expect from us

In 2022, we participated in a joint industry consultation exercise aimed at learning more about stakeholders' views on the role of networks in improving resilience. We also engaged extensively with our customers on resilience throughout our enagement program.

At our Phase 2 deliberative forums, we asked customers to consider where our focus should be when looking at ways to improve resilience. Whilst most felt that assisting communities was important, the feeling was that this was less impactful than strengthening the network. The key argument for this was a belief that a more resilient network would, in itself, assist the community through a reduced impact during critical events.

> 'To me, if they strengthen the network there will be less need for work in the 'assisting communities' category.'
>
> *Bega participant, Phase 2*

The Phase 2 polling indicated that 51 per cent of customers thought our focus should be on strengthening the network, nine per cent thought our focus should be on improving community resilience and 39 per cent of customers thought we should do both equally.

> 'Both are equally important. Strengthening the network will reduce the assistance you need to provide the community with 'a good product that supports itself'.'
>
> *Wagga Wagga Participant, Phase 2*

> ''Strengthening the network is a priority, and a side benefit is that the communities will be assisted.'
>
> *Dubbo participant, Phase 2*

> 'Don't re-invent the wheel or duplicate services. Liaise with the other organisations and create a coordinated plan that provides the community with some empowerment too. Every community will require a different response.'
>
> *Advocate participant, Phase 2*

Options for improving resilience

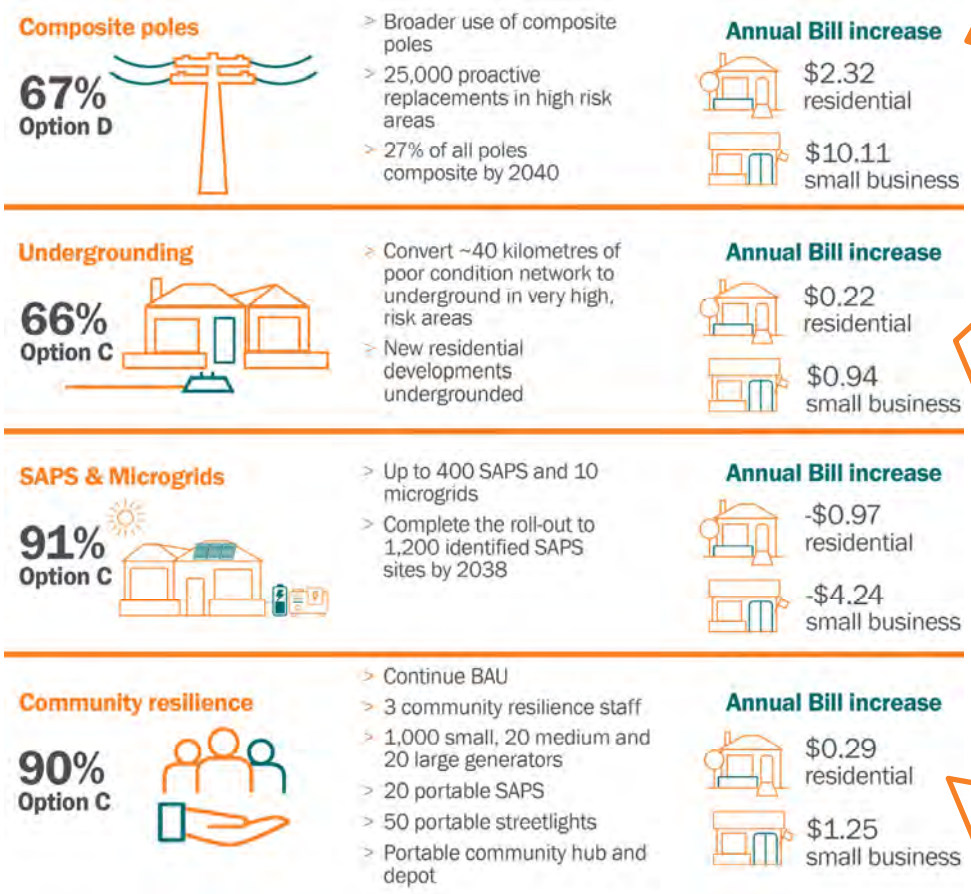
Options for improving resilience include proactive measures that can be used to better prepare for an event, and reactive measures that can support a better response to an event. Essential Energy already employs many of these measures to help manage network resilience. We prepared a suite of options for managing network resilience for discussion at our customer deliberative forums.

During our Phase 2 forums we presented four broad options to better understand customers' desired outcomes as well as the indicative level of investment they were willing to pay for. These options were:

- Option 1 – do nothing more, no additional investment, but customers will pay for restoration efforts as they occur
- Option 2 – slightly more resilient, $52 million over the 2024–29 regulatory period
- Option 3 – more resilient, $118 million over the 2024–29 regulatory period
- Option 4 – much more resilient, up to $500 million over the 2024–29 regulatory period (part of a 20-year plan to significantly improve resilience)

47 per cent of customers preferred Option 3 and 44 per cent preferred Option 4 and there were many requests for an Option 3.5, that would offer slightly better outcomes than Option 3, but not be as costly as Option 4.

Based on those findings, we delved deeper into resilience investments as part of our Phase 3 forums. The majority of customers participating in Phase 3 supported the highest option in each of the resilience investments presented, as shown in the graphic below.



'Option D is a greener alternative and I like that. Even though composite poles are over double the price they save money in the long term'.
Broken Hill small business participant, Phase 3

'I think Option C for this, I agree that critical assets are particularly important. Losing mobile phone towers is catastrophic, every time there is a storm the powerlines fail. We have underground to our house but in other areas there are always issues after every storm'.
Taree participant, Phase 3

'Seems like a good alternative and I would hope that these can be rolled out relatively quickly as a good alternative choice of electricity and a saving to the consumer.'
Dubbo participant, Phase 3

'That seems like a small price to pay for building a resilient network.'

Ballina small business participant, Phase 4

In Phase 4 of our engagement program we re-tested your choices given our investment costs had increased slightly, but also in the face of broader economic pressures on household and business budgets from rising interest rates and inflation. 86 per cent of forum participants indicated that they still supported the investment options being included.

Understanding the impact of climate on our network

More recently, we assessed the impacts of – and specific risks posed by – climate change on our network. **Attachment 6.01** contains a Climate Impact Assessment Report prepared by KPMG and Risk Frontiers specifically for Essential Energy's network. The assessment was the result of collaboration with climate scientists, actuaries, and internal subject matter experts to understand a number of specific perils for our network as a result of climate change. The diagram on the following page shows the methodology used to prepare the climate impact assessment report, which resulted in information about the risks to network locations and assets impacted under various scenarios and perils.

The report considered two climate forecasts as a best estimate of future global mean temperatures:

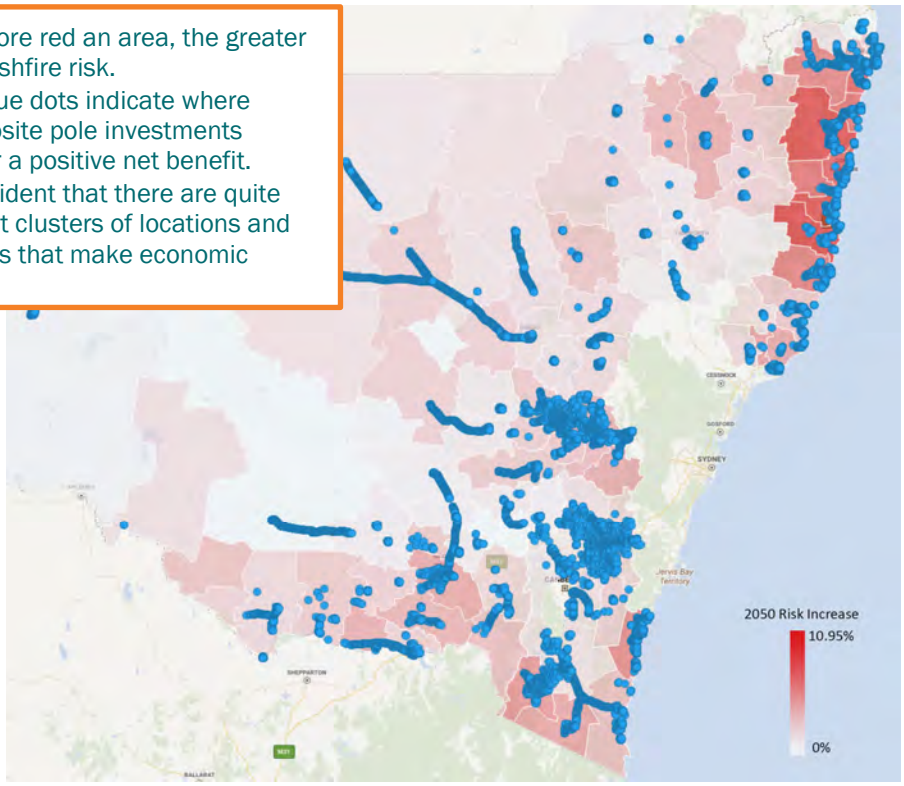
1. A highly likely 2.4 degree Celsius increase in global mean temperatures by the year 2100[5]
2. A worse case 4.3 degree Celsius increase in global mean temperatures by the year 2100[6].

We have conservatively based our expenditure plans on the highly likely 2.4 degree Celsius climate forecast, rather than the worse case scenario.

Multiple time horizons were considered within the assessment, as different time horizons inform different business decisions. For example, an outlook through to 2070 (almost 50 years) equates to the lifecycle of a lot of the assets we install today, such as poles. An outlook through to 2050, however, provides a time horizon where the forecast changes in climate begin to accelerate.

The climate change quantitative modelling has helped us understand the expected long-term impacts of climate change on our network and customers for a range of climate perils. An example of how this report has informed our Proposal is shown below. This graphic below overlays the expected increase in risk to assets from bushfires through to 2050 under the conservative 2.4 degree Celsius forecast and indicates locations where risk based composite pole replacements are economically viable.

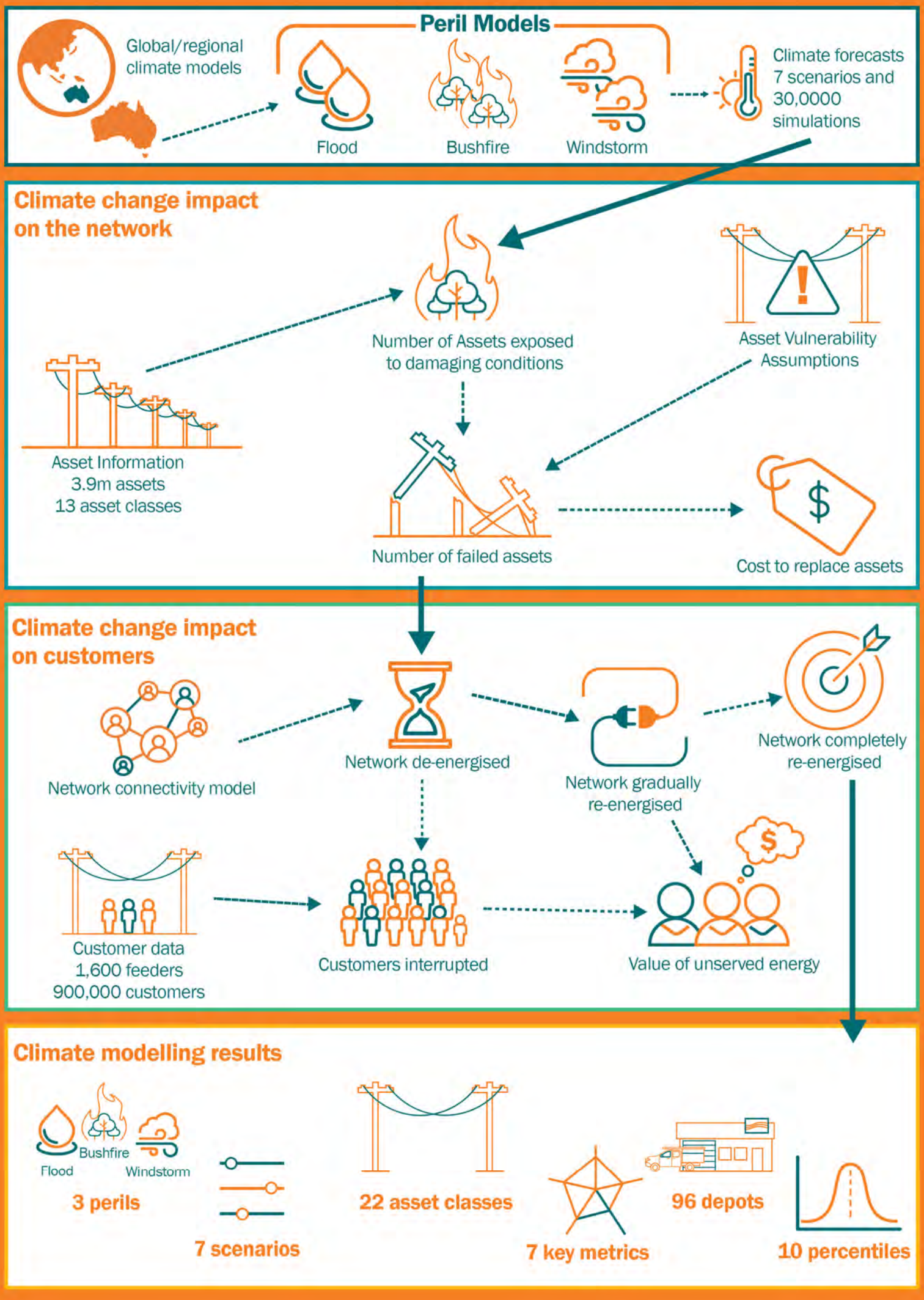
- The more red an area, the greater the bushfire risk.
- The blue dots indicate where composite pole investments deliver a positive net benefit.
- It is evident that there are quite distinct clusters of locations and feeders that make economic sense.



Our Resilience Plan (see **Attachment 6.02**) outlines our overarching approach to planning and decision-making around network and community resilience. It incorporates our principles for how we assess project value and how the climate change modelling has provided a granular summary of forecast network and customer impacts that have been incorporated into our decision making. In particular, and to be sure we continue to deliver the best-value investments, that align with your priorities the climate change impact outcomes have been used for composite poles and undergrounding analysis in the Proposal.

[5] Representative Concentration Pathways ("RCP")4.5 – where RCP describe a wide range of possible changes in future anthropogenic Greenhouse Gas emissions. The numerals associated with the naming of the RCPs correspond to the radiative forcing reached by 2100. For example, RCP4.5 corresponds to 4.5 W/m2 of radiative forces in 2100, which assumed GHG emissions continue to rise to 2040, then decline.

[6] RCP8.5


Peril Models
Global/regional climate models
Flood
Bushfire
Windstorm
Climate forecasts 7 scenarios and 30,0000 simulations
Climate change impact on the network
Number of Assets exposed to damaging conditions
Asset Vulnerability Assumptions
Asset Information 3.9m assets 13 asset classes
Number of failed assets
Cost to replace assets
Climate change impact on customers
Network connectivity model
Network de-energised
Network gradually re-energised
Network completely re-energised
Customer data 1,600 feeders 900,000 customers
Customers interrupted
Value of unserved energy
Climate modelling results
Flood
Bushfire
Windstorm
3 perils
7 scenarios
22 asset classes
7 key metrics
96 depots
10 percentiles

Our proposed investments to improve resilience

We are proposing investments to improve resilience that are supported by our customers and make economic sense.

	Investment 2024-29	Investment plans supported by customers	Benefits	Pace of change
 Composite poles	$138M	> Use composite poles for all future risk-based replacements (11,000 over the 2024–29 period, reduced from 15,000 following economic evaluation) > Gradually increase our usage of composite poles for condition-based pole replacements.	> Fireproof and immune to rot, termites and corrosion > Longer life and less expensive to maintain > Safer for workers and community	Slow to moderate Composite poles installed in all high-risk areas by 2055
 Under-grounding	$30M	> Convert 40 km of poor condition network to underground in very high-risk areas to minimise exposure to bushfires and storms.	> A small subset of customers will see an improvement in outages	Very slow Due to the high-cost undergrounding will be risk prioritised
 SAPS	$84M	> Install SAPS at up to 400 locations initially targeting areas that are hard to access and have a high cost-to-serve.	> Remote and hard to access customers benefit from improved resilience and reliability > Moderate long term cost savings for all customers	Moderate 25% of currently suitable SAPS sites completed by 2029
 Microgrids	$27M	> Commission microgrids at six sites initially targeting long radial sub-transmission feeders with the highest benefit. > One further site will be delivered in this current regulatory period, so the total count during 2024–29 is lower than the numbers supported by our customers	> Reduce asset failures due to fire and large storms at sites with a history of long unplanned outages due to these events.	Moderate All identified sites completed by 2029
 Solar and battery backup	$3M	> Install solar and battery backups at key radio sites > This was also a recommendation from Infrastructure Australia Advisory Paper, *A Pathway to Infrastructure Resilience,* released in August 2021.[7]	> Improve our ability to restore service to customers during long duration outages.	Moderate 50 sites completed by 2029
 Portable community resilience assets	$32M	> Acquire portable assets that can be transported to different locations (portable streetlighting, community hub, depot, solar panels, batteries, switchboards and generators to support community resilience).	> Allow for temporary supply until permanent repairs can occur. > Increased engagement with community	Moderate 1,123 portable assets available by 2029
 Resilience plans	$3M	> Hire three additional staff to work with councils, communities and critical infrastructure asset providers to help them develop resilience plans	> Assist in developing coordinated resilience plans allowing communities to better adapt, withstand and recover from climatic events	Moderate Resilience plans in all high-risk locations by 2029

'We are acting very conservatively at the moment it is time to batten down the hatches and limit our exposure.'

Council participant, Phase 3

'I think most people would think the cost wasn't high if they knew what they were getting for that cost.'

Inverell participant, Phase 4

'I like a slower transition.'

Aboriginal and/or Torres Strait Islander participant, Phase 3

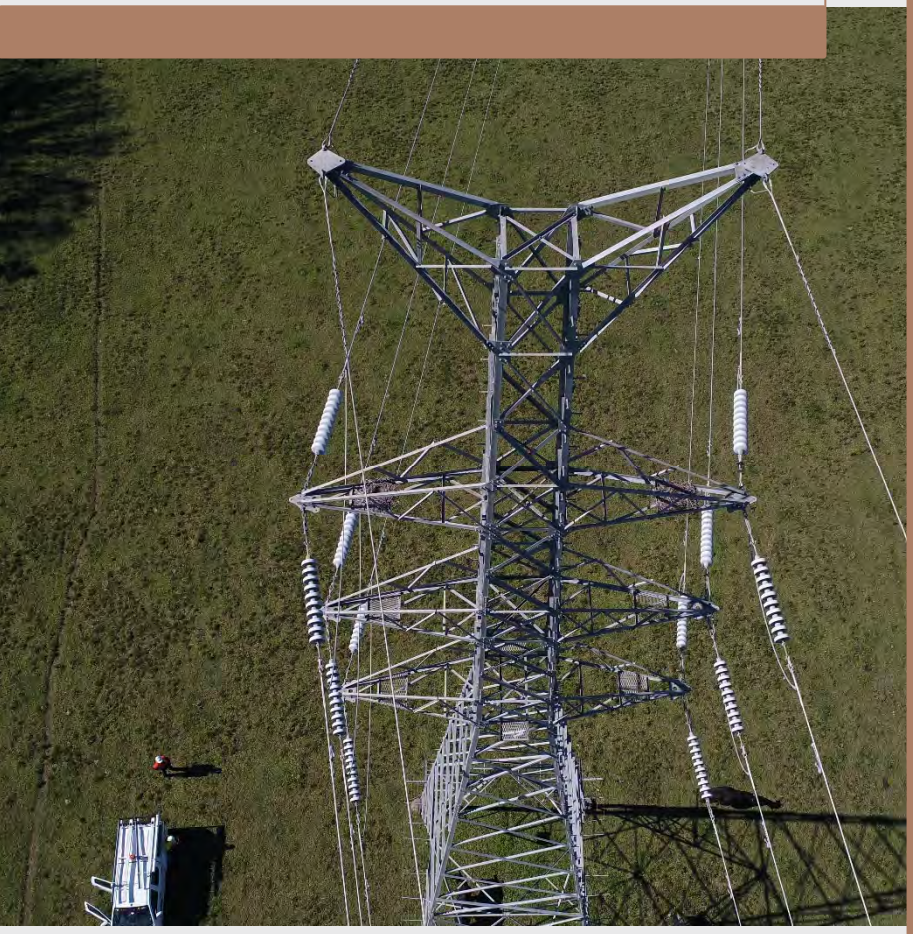
'An increase in prices is never ideal but I think Essential Energy is trying to get the maximum benefit for everyone.'

Culturally and linguistically diverse participant, Phase 4

[7] Infrastructure Australia (2021) 'A Pathway to Infrastructure Resilience'.

07

A network fit for the future



Chapter summary

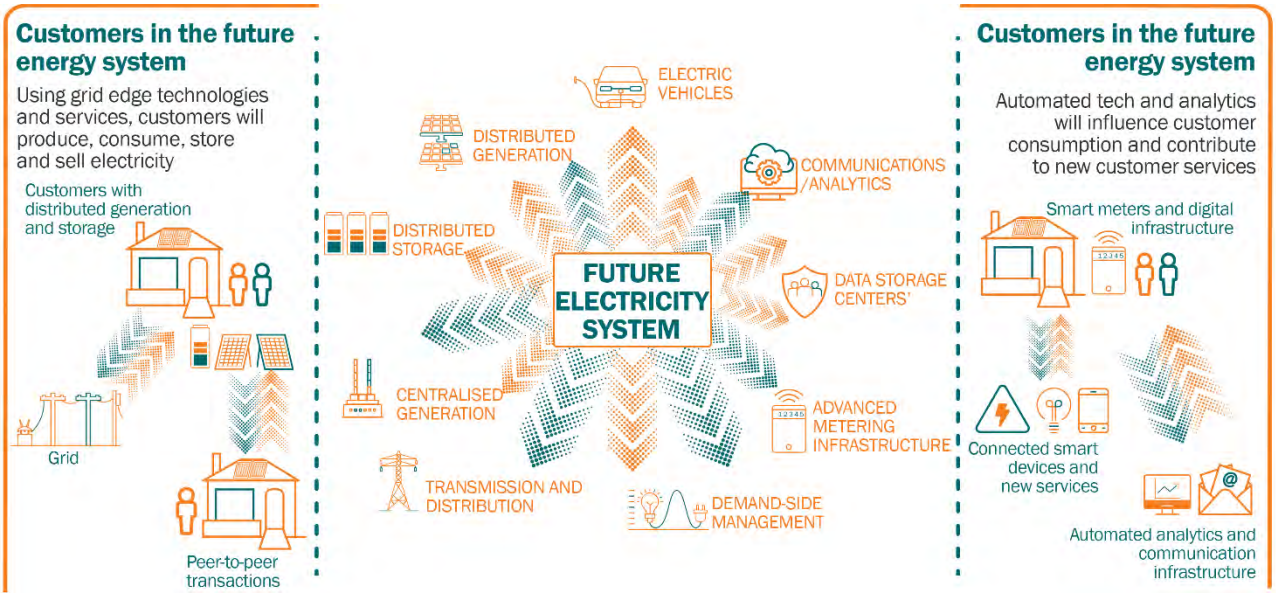
- You are changing the way you use our network and you want us to keep up with those changes
- You want us to upgrade our network so that it accommodates higher levels of renewables without impacting power quality
- We plan to transform our network to address your changing needs, new and emerging technologies, and enable the markets of tomorrow

The changing energy system

As we discussed previously, the increasing accessibility and affordability of renewables has led to a consumer-driven move to two-way electricity flows, with generation resources deployed across the energy system. These CER, such as solar panels and batteries, are often located at your home.

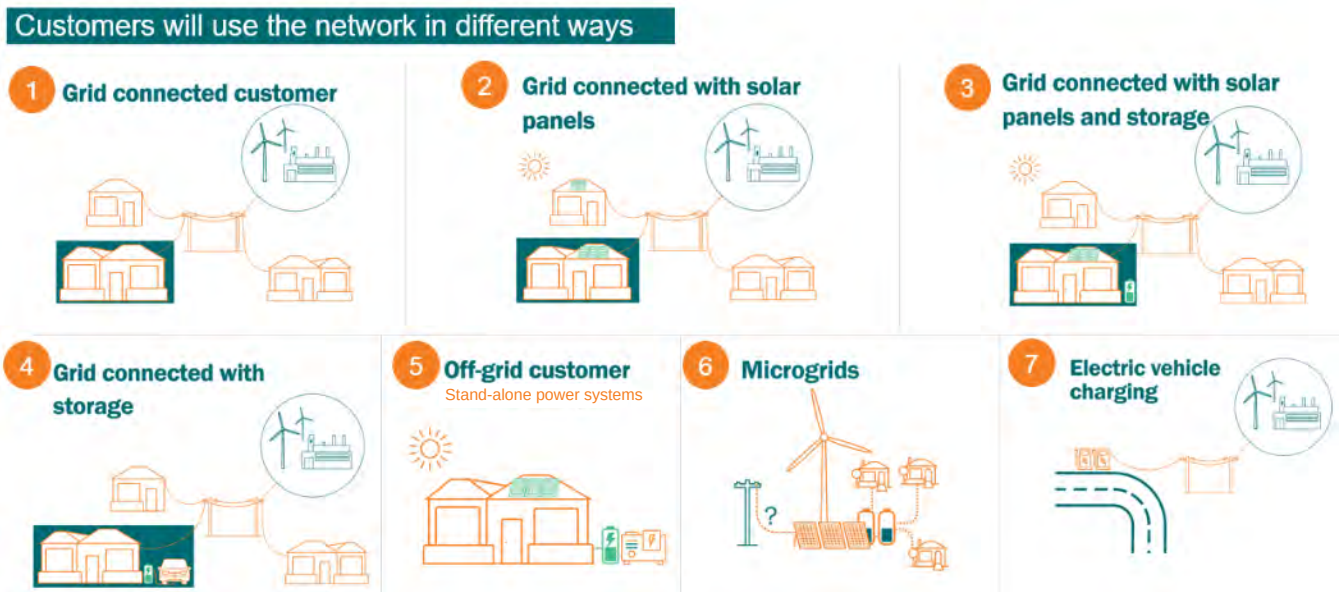
To embrace these changes and support reductions in greenhouse gas emissions, distribution businesses like ours must rapidly adjust. Current practices and infrastructure need to change to maintain network performance and stability – and to offer you (the customer) choice – while using new network technologies to deliver a more efficient, smarter network.

> 'Poles and wires will have to be updated. There will be so many new technologies and they were built for one-way transmission of energy, and suddenly everyone is sending energy back.'
>
> *Dubbo participant, Phase 1*



Customer-led change

You are taking a central and active role in the evolution of the energy system. You also have growing choice in how you connect to the network and consume and share energy. More than a quarter of you have already installed rooftop solar generation, allowing you to use electricity you generate and to export (sell) any excess back to the grid for others to use. You have done this for various reasons, from reducing your electricity costs to supporting emission reductions. The diagram below shows the variety of ways you can source and store energy.



Technology-led change

New innovative technologies are radically challenging the traditional energy system. Some technologies we use today weren't available five years ago, and there will be technology in five years' time that we haven't dreamed about today. However, we believe there are enduring themes that will define the energy industry into the future.

As we described in **Chapter 3 – About Essential Energy**, your homes are becoming smarter, more automated, and able to access new markets such as peer-to-peer energy trading. Smart meters are progressively being rolled out, appliances and systems can work together to adjust your energy usage, and new products and services are being developed such as trading in excess solar power.

> '... I thought there would be some signal that can find the faults automatically. Maybe in the future there will be more technology that can do that.'
>
> *Dubbo participant, Phase 3*

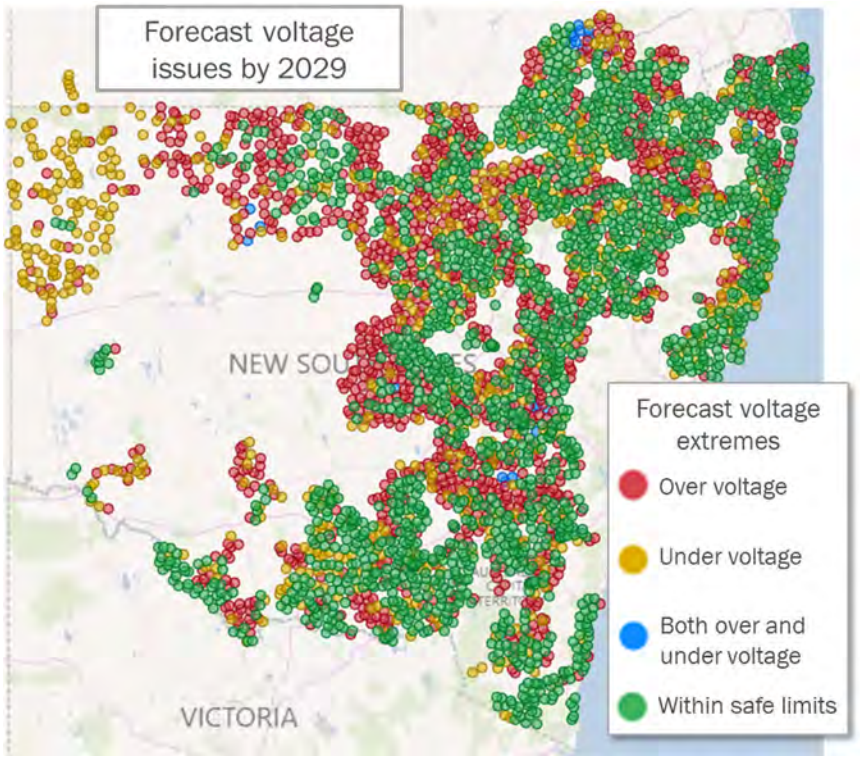
What this means for our network

These changes bring us opportunities to improve the services we provide, but they also do bring some challenges.

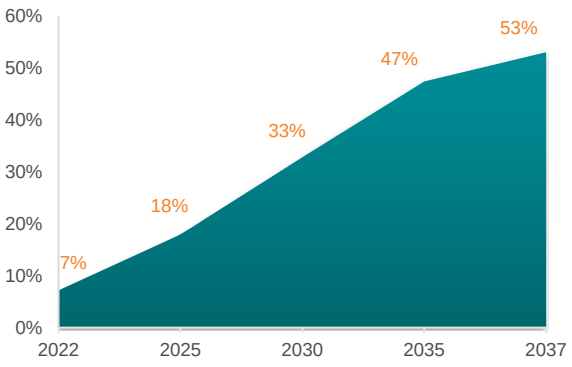
Our network's most immediate challenge is accommodating and managing increasing levels of exports and demand from the increasing uptake of CER (see **Chapter 11 – Energy and demand forecasts**). Without pre-emptive investment and management, increasing CER connections will:

- **Create greater levels of volatility on our network**– CER are inherently unpredictable, causing rapid load fluctuations on the network. For example, when a cloud goes over a neighbourhood the level of solar output suddenly drops in that area. Or, if everyone plugs in their EV after work, this will cause a huge increase in peak demand. These fluctuations can strain and damage our equipment – meaning greater numbers of outages and higher costs as we need to replace more assets
- **Result in more power quality issues –** we forecast that over 50 per cent of our customer base by 2037 will begin to experience power quality issues and without network improvements, or changes to pricing, we may need to respond by further decreasing our customers' ability to export solar electricity to the grid

A recent review of our network has highlighted that if we do not act now, the level of CER on the network will reach a tipping point by 2030 and these issues will exponentially increase. The map below indicates where we can expect forecast voltage issues in 2029 if we do not invest to maintain power quality and protect assets. The accompanying chart illustrates the growing proportion of customers who would experience export constraints if we don't invest to manage these changes in consumption patterns.



In the absence of power quality investment, the percentage of customers who will face export constraints will continue to grow



These under- and over-voltage issues only occur for a few hours on some days each year in solar saturated areas of our network. Generally, this is during spring and autumn days where there is plenty of sunshine and mild temperatures, so customers are not running their air-conditioners or heaters. In the absence of demand for energy over the middle of the day, voltage issues occur. We currently manage this issue by manually adjusting the local asset settings, but this reactive approach is costly and usually only provides a short-term solution.

Until an investment to increase the export capacity in these areas is justified, our local network protection equipment turns customers' exports off when the technical limits of our network are breached. It also means we have to limit or even deny new export connections in these areas in the interim.

What customers and stakeholders expect from us

We used our Phase 2 engagement forums to understand customers' expectations around power quality, our network's ability to facilitate CER exports and their broad appetite for investment in this area. We presented four options:

- Option 1 – Continue to manage power quality manually at a cost of $21 million, though this would see power quality decline over time
- Option 2: Mitigate existing problems over time through $45 million of targeted investments in real-time network monitoring, dynamic assets and the introduction of flexible export limits (that allow for dynamic grid management) to maintain power quality at today's level
- Option 3: Mitigate existing problems and pre-empt some by investing $81 million in basic level of real-time network monitoring, a wider use of dynamic assets and the wider use of dynamic grid management to improve power quality
- Option 4: Avoid the problems from occurring by investing $164 million in a high level of real-time network monitoring, the significant use of dynamic assets and the enhanced adoption of dynamic grid management to greatly improve power quality.

66 per cent of customers preferred Option 4, and 27 per cent preferred Option 3.

'The Option 1 thing that scares me is that power quality will decline –I don't think anyone will choose that.'

Ballina/Taree participant, Phase 2

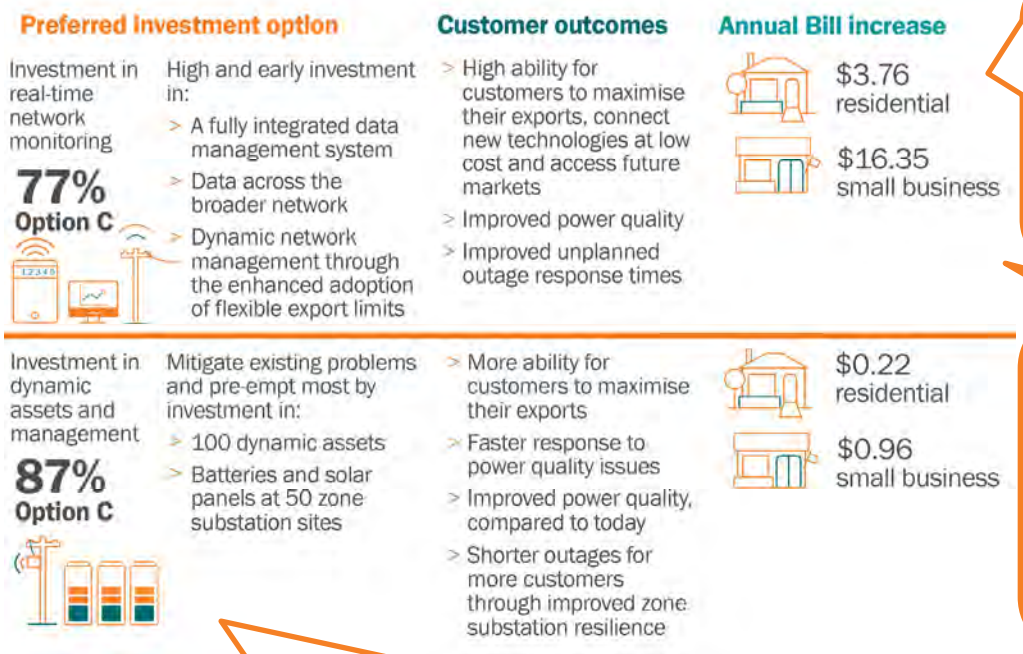
'Investing in assets to actively manage the network is good because its preventative. Investing in solar panels is better for the environment as well. It needs to move with the most modern technology to the maximum extent'.

Bega participant, Phase 2

'How fast and what are the trade-offs are the key questions. Who will be the winners and losers of a quick transition?'

Consumer advocate, Phase 2

We maintained a wide range of investment options for our Phase 3 forums and highlighted that whilst Option 4 (above) is the desired goal for our network, the question is 'how quickly do we want to get there?'



'If we have real time monitoring then Essential Energy can act faster if something happens. Hopefully that will reduce the amount of problems caused by issues.'

Dubbo participant, Phase 3

'What is the cost of an outage for a business? It can have a massive impact for some businesses. So if you put the $16 increase in that context, it's not much at all.'

Wagga Wagga small business participant, Phase 3

'Shorter outages for a larger number of people is a real positive. Power quality will improve more under Option C as well.'

Ballina participant, Phase 3

In our Phase 4 forums we asked customers their preferred approach for managing excessive CER exports to the network. Rather than limiting the amount of energy that customers can export to a lower, fixed level for every day of the year, 77 per cent of customers supported us adopting flexible connection agreements for new connections and upgrades. This will allow us to reduce the exports of these customers in the saturated areas of the network for the few hours required on a few days each year, but for most days of the year, customers' exports will not be affected at all. To read more about what we heard see **Appendix A – Summary of engagement outcomes** and **Attachment 4.02 – How engagement informed our Proposal**.

'It would be much easier to deal with restrictions on just a few days a year, instead of having the permanently low export allowance.'

Broken Hill participant, Phase 4

Our proposed investments

We have developed a plan for a staged rollout of investments in our future network capabilities – to get us to the desired goal for our network over a few regulatory periods, rather than just one. Our proposed investments will allow us to better monitor and control the network to support greater volumes of CER exports using our existing assets.

'We are at the heart of a renewable energy zone and have a bright future. We are getting quite a bit of solar activity around here, so Essential Energy needs to be geared up to take what we produce.'

Council participant, Phase 1

We will use advanced monitoring equipment, innovative pricing and dynamic controls to flexibly manage the strains on our network. This will become more important as more CERs come online and as you transition from traditional energy sources such as gas, petrol and diesel to electricity.

'The next tsunami will be electric vehicles. There is a huge battery capacity there that will be available to the grid very soon. We will be on the back foot if the approvals are not moved on soon.'

Solar installer, Phase 1

The table below outlines what we plan to do to prepare for the future and your changing expectations. It is worth noting that these investments are just part of a suite of tools we will use to encourage customers to use their CER in a manner that benefits themselves and the network and to make better use of the network assets we have already built. You can read more details about our plans in this area in **Attachments 7.01 - DER Integration Strategy** and **10.05 - Future Network Business Case**.

	Investment 2024-29	Investments supported by our customers 2024-29	In the future 2029-34
 Network Visibility assets	$21M	> Assets in place to allow for basic real-time monitoring in local network areas	> Dependent on smart meter rollout, further investment may not be required
 Data management system	$66M	> IT systems in place to integrate network visibility assets and other data for real-time monitoring for basic DOEs	> Expanded capability to monitor and control the network for advanced DOEs
 Smart meter data	$16M	> Subscribe to data points prioritising areas with existing and emerging power quality issues	> Expanded data points to capture the broader network
 Dynamic assets and traditional augmentation	$67M	> Invest in localised areas with existing and emerging power quality issues	> Dependent on impact of DOEs, tariffs and CER uptake
 Batteries	$1M	> Engagement with third parties for the use of batteries to assist with local voltage management	> Dependent on battery costs, impact of DOEs, tariffs and CER uptake

Benefits

The exports unlocked by these investments will provide for equivalent reductions in emissions of around 147,000 tonnes of CO^2 in the 2024–29 period

Increased dynamic grid management will see this grow to reductions of 283,000 tonnes of CO^2 in the 2029–34 period – or enough to power 92,000 homes a year!

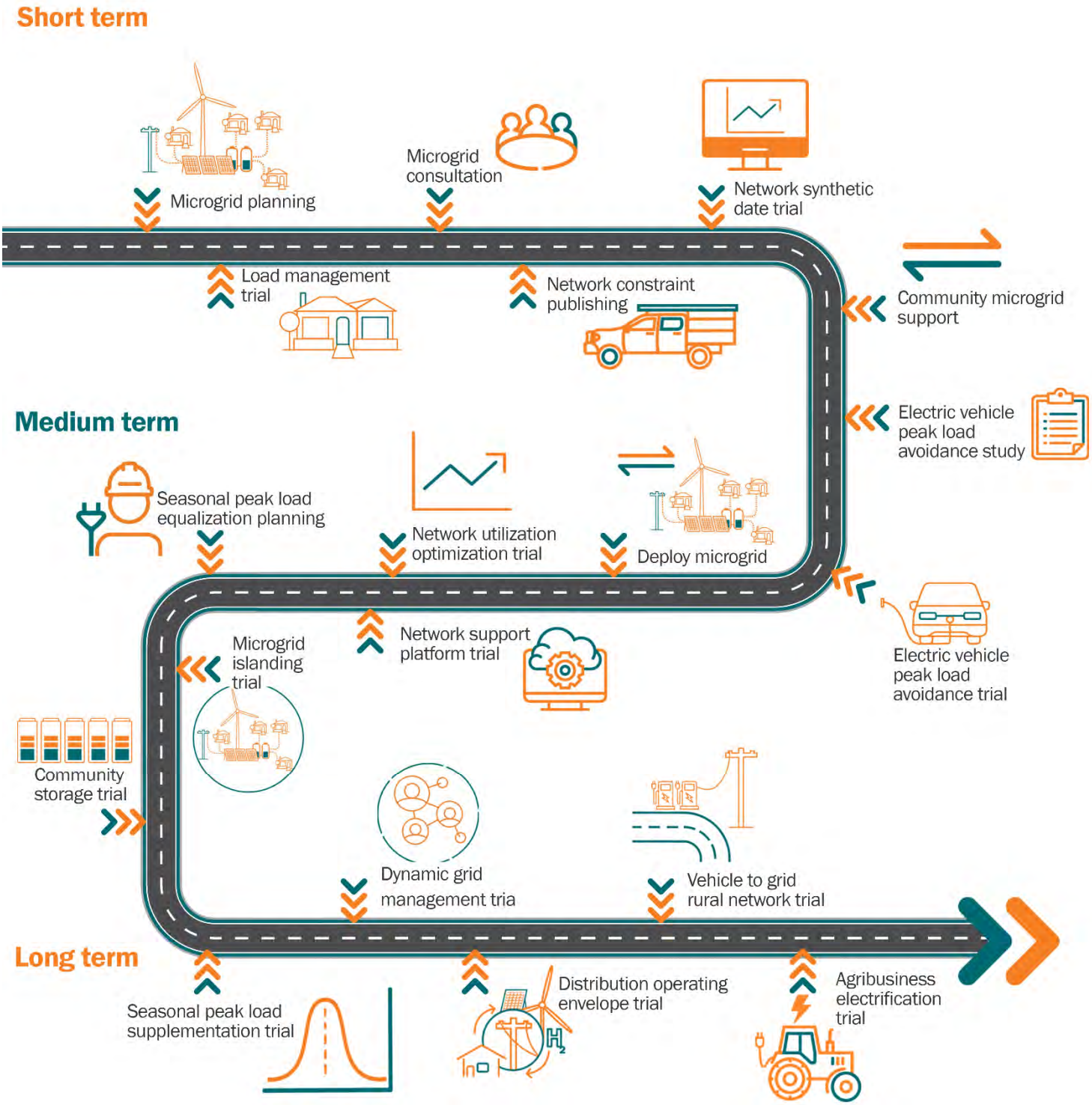
Innovation trials to support the network of the future

Our future network plan will be supported by trials and ongoing monitoring of market changes. Innovation is crucial for delivering the network of the future. Many of the challenges and opportunities associated with CER and the energy transition will be driven by research and trials across the industry, universities and the private sector.

The diagram below shows the three-year innovation agenda we developed to build our capability in:

- network resilience – understanding how we can use microgrids and storage to support community and network resilience to climate change and major climate events
- integration of CER – exploring solutions and partnerships that will allow higher levels of CER on the network, while retaining safety, reliability and customer flexibility
- EV integration – ensuring we have the right capability to support the adoption of EVs and electric machinery, and to encourage beneficial charging behaviour (refer **Chapter 12 – Our approach to pricing**).

Network of the future innovation trial roadmap



08

Framework and approach

Chapter summary

- We will establish the right framework and incentives for the 2024–29 regulatory period
- We will change how we classify our services to align with the AER's updates
- We will accept the AER's revenue control mechanisms
- We will introduce three new customer service metrics to help us improve our customer service to you

What we're proposing

The 'Framework and Approach' (F&A) is an AER document which sets out how the services we provide will be regulated over the 2024–29 regulatory period. This includes how different services are classified and the incentive schemes that will apply to Essential Energy to provide you with cost-efficient and reliable services.

For the 2024–29 regulatory period, core electricity distribution services are assumed to be for providing and maintaining the network infrastructure to deliver electricity from the grid to your premises (consumption services), as well as accommodate your electricity exports from CER (export services) – reflecting recent changes to the NER.

Recent legislative changes also allow us to transition customers connected to our network to more cost-effective, reliable and resilient solutions, such as regulated SAPS. We intend to introduce these to complement our network solutions and place downward pressure on costs.

We also propose to introduce a new Customer Service Incentive Scheme (CSIS) to incentivise improvements to our customer service.

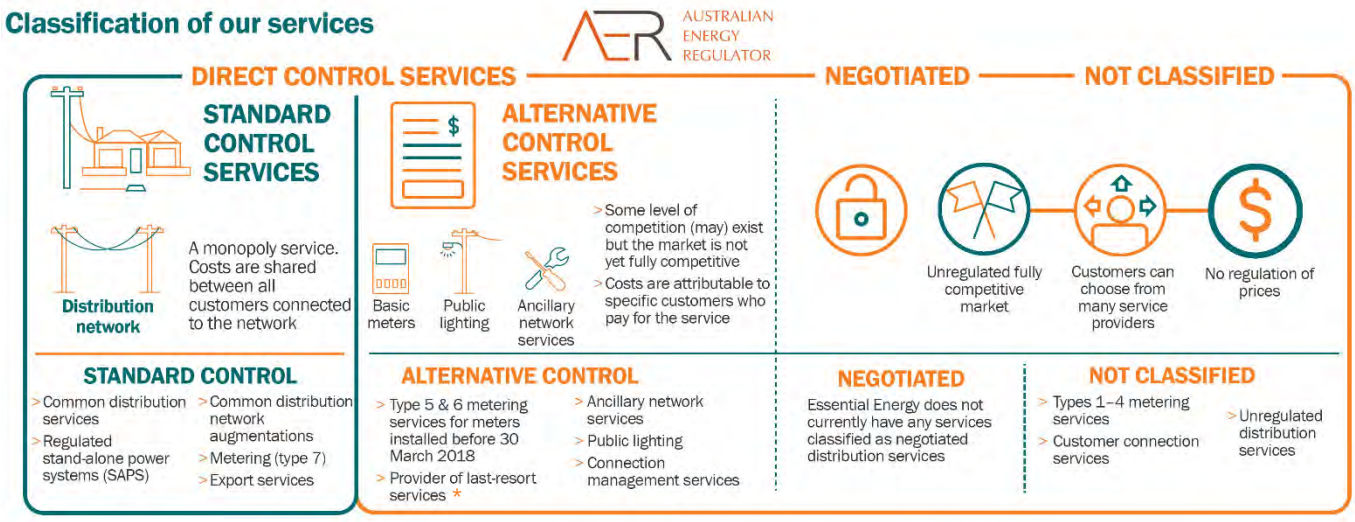
We primarily engaged with the SCC on items within the F&A see **Chapter 4 – Our customer engagement**, apart from significant input from customers for the CSIS development.

Our proposed F&A for the 2024–29 period is subject to approval by the AER.

Classification of services

The AER's classification of services determines which services are regulated. The diagram below outlines the classification categories. **Attachment 8.01** outlines the detail of our proposed service classifications for 2024–29, which aligns with that published by the AER in July 2022.[8]

How the AER classifies distribution services in NSW



*Enables Essential Energy to provide certain contestable services (mainly connection services) where the customer is unable to find an alternative provider.

[8] AER, Framework and Approach: Ausgrid, Endeavour Energy, Essential Energy (NSW), Regulatory control period beginning 1 July 2024, 29 July 2022

Broad service classifications

Direct control services

Direct control services are regulated services that are not offered in a competitive market. This means they're subject to revenue and/or price controls approved by the AER. Most of our services are direct control services, which are classified as one of the following:

- Standard control services (SCS) – these are the core services we provide through the shared distribution network, which supplies electricity to all of you using poles, wires and associated equipment.
- Alternative control services (ACS) – these are services provided directly to a specific customer, who pays the full cost. These services include some metering services, public lighting and ancillary network services (such as customer connections).

Negotiated services

These are services where you can negotiate prices on competitive terms. At present, we don't provide any negotiated services.

Not classified services

These are services you can get from other providers. This means you can negotiate prices, which are set by market forces and competition, not the AER. An example of these services is Type 1 to 4 customer metering installations (smart meters) and supporting services which are competitively available.

Grouping our distribution services

We worked with the AER to group our distribution services for 2024–29, as per the diagram above. Key changes include:

- SAPS – SCS will now include work related to regulated SAPS, which typically include solar panels, batteries and back-up generators. This recognises that these systems can provide an efficient alternative to network assets, particularly in remote and bushfire-prone areas.
- Export services – supporting the export of excess distributed generation from customers' premises (such as from solar panels) to the grid will now be recognised as part of providing SCS.

We agree with the service groupings the AER published for 2024-29. We note that there may be amendments made to these approved service classifications, due to changes in the AER's position between now and 2024 to reflect a variety of current topics, such as the Australian Energy Market Commission's (AEMC's) metering review and the Commonwealth Government's initiative for funding Community Batteries. As timing permits, we will look to reflect any necessary changes in our Revised Proposal. We expect the AER to apply any relevant changes to our 2024–29 Determination.

Revenue control mechanisms

The AER's F&A paper for the 2024–29 regulatory control period sets out its proposed control mechanisms and associated formulae for SCS and ACS. At a high-level the control mechanisms are about who bears the risk for changes in consumption/volumes. For example, under a price cap, prices are fixed and changes in volumes (to forecast) are absorbed by Essential Energy, whereas under a revenue cap, revenue is fixed and changes in consumption are adjusted via customers' prices.

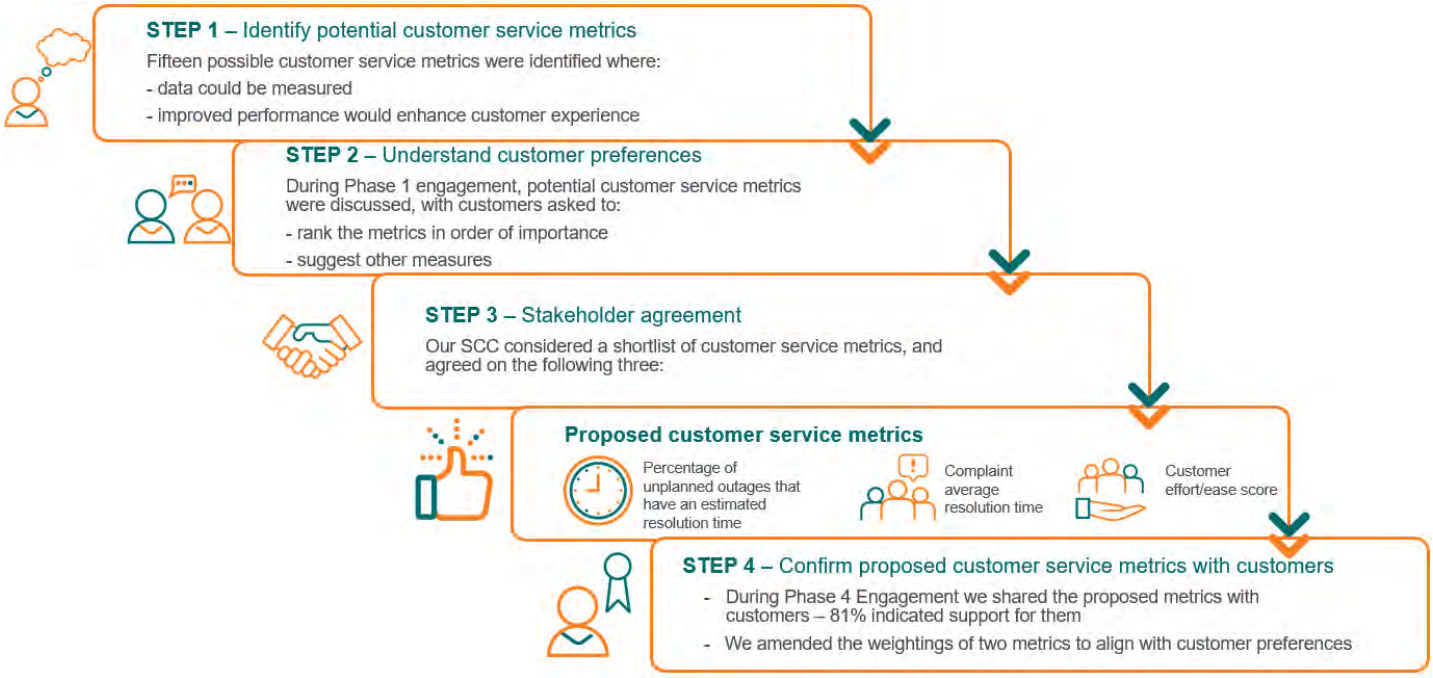
We accept the AER's proposed control mechanisms and associated formulae; a revenue cap for SCS; and a price cap for ACS; a position endorsed by our SCC. Please refer to **Attachment 8.02 – Revenue control mechanisms**.

Incentive schemes

The regulatory framework includes incentive schemes with rewards and penalties, depending on our performance. The incentive schemes encourage us to be more cost-efficient, improve service standards and better manage peak demand on the network.

The SCC agreed that all of our existing incentive schemes should apply in 2024–29, with one exception. In consultation with customers, we have agreed that a CSIS should be introduced to replace the current telephone answering service standard within the Service Target Performance Incentive Scheme (STPIS). The new CSIS incentivises improving specific areas of our customer service, which you told us were important. You want us to improve unplanned outage notifications to include an estimated time to resolve, make it easier for you to deal with our business and minimise the time we take to resolve complaints.

How we developed the CSIS in conjunction with customers and stakeholders



Our engagement with you underpinned the development of our proposed CSIS. We asked you – and other stakeholders – what areas of customer service you valued and would like to see improved. We included this topic in our Phase 1 Customer Engagement program and in a customer survey as part of our Customer Journey Mapping Program.

We heard that good customer service involves clear and simple communication, via multiple channels. You told us you considered interactions involving outages to be the most important communications you have with us. As a result, we agreed on two key customer service parameters:

- the percentage of unplanned outages where we provide an estimated time to restore services
- customer ease, as measured via quarterly and post-interaction customer surveys.

Our SCC suggested a further refinement to ensure we kept our focus on the time taken to resolve your complaints. We agreed and added a third parameter:

- the average number of days to resolve complaints.

In our Phase 4 engagement forums customers reviewed the weightings for each of these parameters and suggested some changes which we have reflected.

Over the next year, we will gather data on our performance for each of these parameters as a trial run. We will review the results and, in consultation with you, decide whether the outputs provide enough evidence to support their inclusion into the CSIS for 2024–29. We will also use this data to set the targets for the incentives. More information about our proposed CSIS is included in **Attachment 8.03**.

Participants in our customer engagement

'You want them to give you the confidence that they are working on it and are empathetic.'

Wagga Wagga participant Phase 1

'For unplanned outages and complaints they're terrible! So they should be measured on this.'

–Broken Hill participant, Phase 1

The table below provides an overview of the incentive schemes we propose to apply in 2024–29.

Incentive schemes we are considering for the 2024–29 regulatory period

INCENTIVE SCHEME	HOW DOES IT WORK?	HOW DOES IT AFFECT A CUSTOMER?	OUR PLANS
EBSS Efficiency Benefit Sharing Scheme	Encourages us to improve the efficiency of our operating expenditure.	Rewards and penalties are shared – around 70 per cent to customers and 30 per cent to us, leading to long-term cost reductions.	The EBSS currently applies to us, and we are seeking to continue the scheme in 2024–29.
CESS Capital Expenditure Sharing Scheme	Encourages us to improve the efficiency of our capital expenditure.	Rewards and penalties are shared – around 70 per cent to customers and 30 per cent to us, leading to long-term cost reductions.	The CESS currently applies to us, and we are seeking to continue the scheme in 2024–29.
STPIS Service Target Performance Incentive Scheme	Encourages us to meet reliability targets through rewards and penalties.	If reliability improves, your bill will increase, and if it declines, your bill will reduce.	The STPIS currently applies to us, and we are seeking to continue the scheme in 2024–29, with an updated customer service metric and adjusted targets for expected reliability improvements.
CSIS Customer Service Incentive Scheme	Encourages us to improve our customer service.	Rewards and penalties will apply for three customer service measures: unplanned outage notification, customer complaints, and customer ease.	We are seeking to replace the telephone answering parameter within the STPIS with a CSIS. The reward or penalty will be no more than +/– 0.5 per cent of revenue.
DMIS Demand Management Incentive Scheme	Encourages us to investigate alternative solutions to manage network demand.	New alternative technologies can be implemented on the network, leading to long-term cost reductions.	The DMIS currently applies to us, and we are seeking to continue the scheme in 2024–29.
DMIA Demand Management Innovation Allowance	Encourages trials of innovative technologies to manage network demand.	Stimulates research and development opportunities that will lead to lower network charges.	The DMIA currently applies to us, and we are seeking to continue the scheme in 2024–29.

Further detail on our approach to STPIS for 2024–29 is contained in **Attachment 8.04**.

We note that the AER is reviewing the incentive schemes, which may result in changes to the expenditure-related incentives (EBSS and CESS). Changes may also be made to the service reliability incentives (STPIS) to incorporate incentives relating to export services. We expect the AER to apply any changes to the incentive schemes in their Draft and Final Determinations for us.

Ring-fencing waivers

We have the following AER-approved ring-fencing waivers that are due to expire on 30 June 2024:

- our Essential Water business in Broken Hill
- provision of technical training services to accredited service providers (ASPs) in specific regional locations
- a water access agreement with the Clarence Valley Council in Nymboida in NSW.

We recently divested our interest in the Nymboida water assets, so we no longer need this waiver. We do still, however, require waivers to continue to provide water and sewerage services in the Broken Hill area, and technical training for accredited service providers (ASPs) in certain areas across NSW, where there are difficulties with obtaining these services locally.

We are therefore requesting that the AER renew these two ring-fencing waivers for 2024–29. Further information and the waiver applications themselves, can be found in **Attachments 8.05, 8.05A and 8.05B**.

Negotiating framework

We can provide some services on a negotiated basis. Under the NER, we must prepare a negotiating framework that sets out the procedure to follow during these negotiations. We propose to make minor administrative amendments to our current negotiating framework as well as making it easier to understand. The updated document can be found in **Attachment 8.06**.

Pass through events

During a regulatory period, circumstances can change that might affect the amount of revenue we require to operate. The pass through provision in the NER provides a mechanism to ensure substantial cost increases or reductions resulting from material unforeseen events can be reflected in our revenue requirement.

We propose to nominate the following pass through events, which are similar to those included in previous regulatory periods:

- an insurance coverage event
- a natural disaster event – refined to include related events and the impact of compounding events
- a terrorism event
- an insurer's credit risk event.

We propose to add one more event – a major cyber event – to the above list. Please refer to **Attachment 8.07** for our proposed pass through events.

09

Operating expenditure

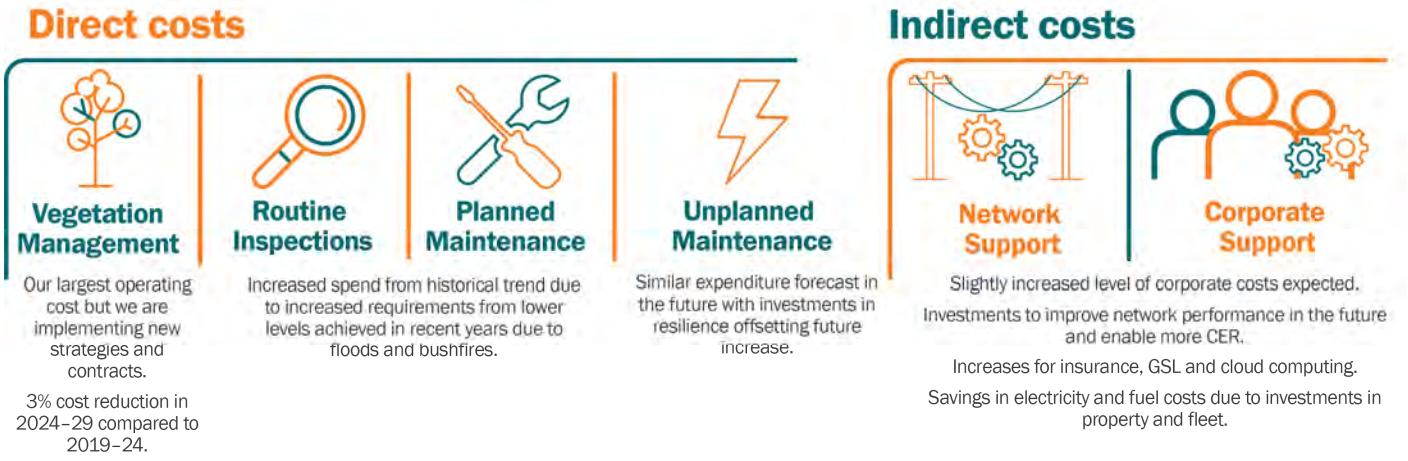
Chapter summary

- We forecast opex across 2024–29 will be 3 per cent higher (in real terms) than during 2019–24
- The cost of cloud computing, insurance, future network and Guaranteed Service Levels are all expected to increase in the 2024–29 regulatory period
- We are including property and fleet savings as a result of lowering our environmental impact

Operating expenditure

Our opex plans for 2024–29 were developed based on our engagement with you. These plans will enable us to deliver standard control services that align with your values and priorities. This type of expenditure contains direct costs (activities carried out directly on network assets) as well as indirect costs (functions that indirectly support business operations). These costs have been allocated in line with the methodology used for allocating costs across our business, as shown in **Attachment 9.01 – Cost allocation methodology**.

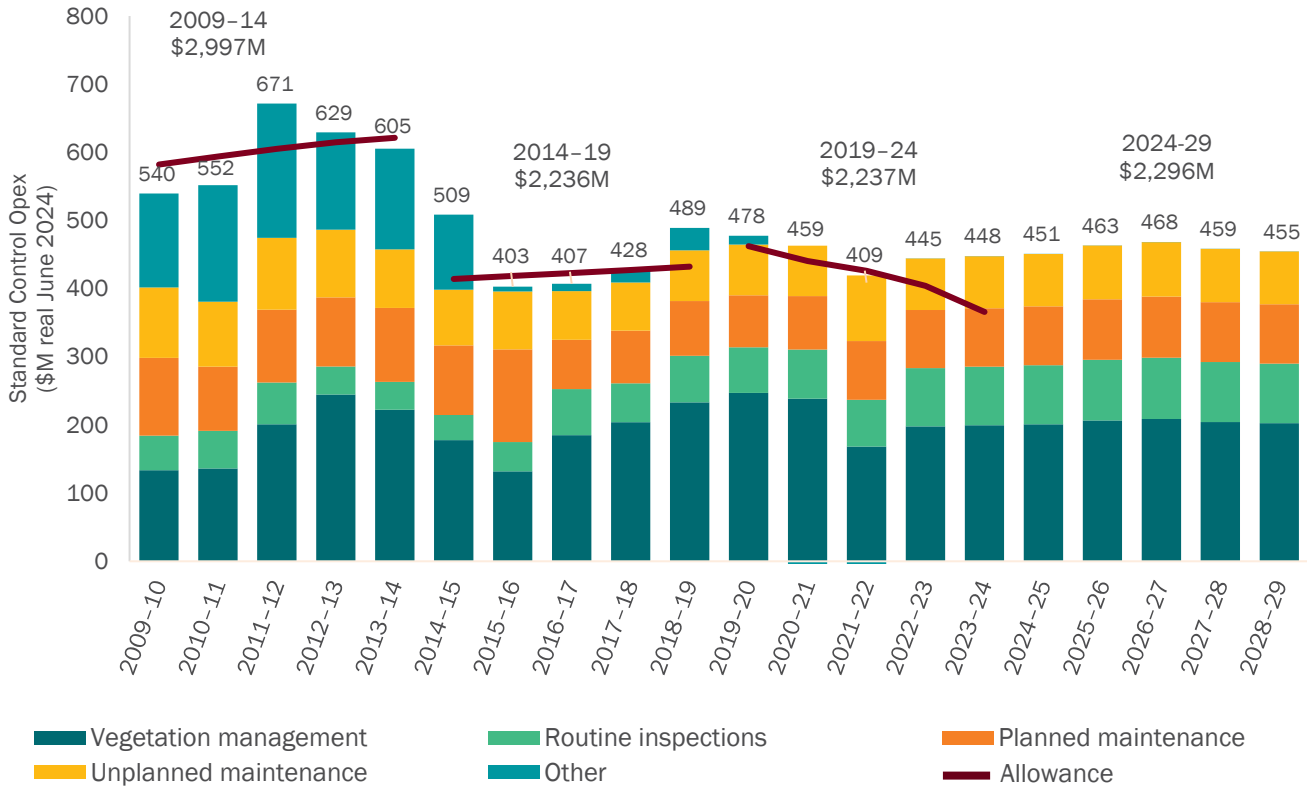
Our direct and indirect costs



The key material assumptions used when preparing our opex (and capex) plans are set out in **Attachment 9.02**.

As outlined earlier, our network and the communities we serve have faced a variety of challenges in the 2019–24 regulatory period. Our operating costs have reflected some of these issues. We expect real opex in 2024–29 to be three per cent higher than in the 2019–24 regulatory period, with a reduction in vegetation management offset by increased costs associated with key maintenance work.

Proposed operating expenditure compared to historical expenditure (excludes debt-raising costs)



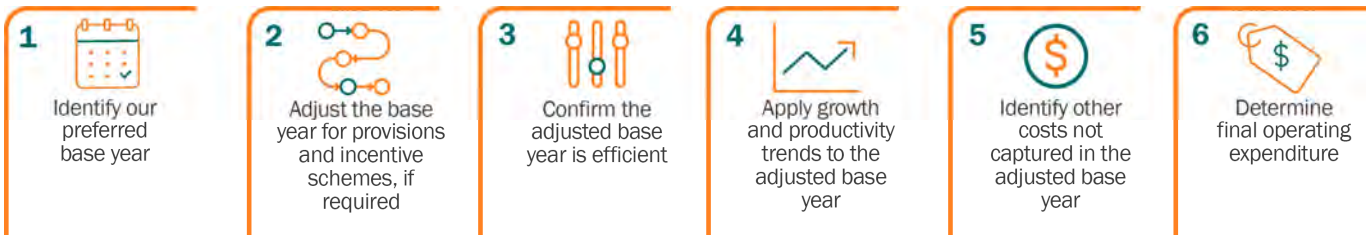
Proposed operating expenditure by category 2024–29 ($M, real June 2024)

	2024–25	2025–26	2026–27	2027–28	2028–29	Total 2024–29
Vegetation management	201	206	209	204	203	**1,023**
Routine maintenance	87	89	90	88	87	**441**
Planned maintenance	86	89	90	88	87	**440**
Unplanned maintenance	77	79	80	78	78	**391**
Other	0	0	0	0	0	**1**
Controllable operating expenditure	**451**	**463**	**468**	**459**	**455**	**2,296**
Debt-raising costs	5	5	6	6	6	**28**
Proposed operating expenditure	**456**	**469**	**474**	**464**	**461**	**2,324**

Numbers may not add up due to rounding

Establishing an appropriate level of expenditure

We adopted the AER's preferred methodology for forecasting standard control opex – the base-step-trend approach – using a six-stage process. More detail on our forecast opex and how we applied this methodology is included in **Attachment 9.03**.



Applying the base-step-trend approach

Our preferred base year

We have selected 2022–23 as our base year for developing opex forecasts for the 2024–29 regulatory period. We will only be part way through this financial year when we submit our Proposal to the AER, so we will use forecast opex to determine the base year costs.

We selected 2022–23 as the base year because it will be the most recent financial year, based on actuals, at the time the AER makes its final determination in early 2024.

Adjusting the base year

We made adjustments to the base year operating expenditure for categories that are separately forecast. For this reason we removed Movement in Provisions and the Demand Management Innovation Allowance from our estimate of base year expenditure. We also caution that recent wet weather has been challenging our ability to deliver scheduled work and may abnormally affect this base year estimate.

Our base year is efficient

The most recent annual benchmarking report prepared by the AER was an important consideration in determining our efficient level of opex. We engaged Frontier Economics to perform benchmarking in accordance with the AER's preferred modelling approach. The results of that modelling demonstrate that our forecast base year opex is efficient.

Applying trends to the base year

Once we determined our efficient base year opex, we applied trends to reflect the following:

Output growth – this takes into account growth in customer numbers, circuit length and demand. Our output growth is between 0.49 per cent and 0.83 per cent for each year in the 2024–29 regulatory period.

Price growth – this takes into account the contribution of labour and materials to total prices. The difference between the real wage index and the consumer price index was used to forecast changes in real labour prices. We did not include any real price changes in materials despite our expectation that COVID-19 and the global geopolitical environment are likely to result in continued higher costs across the supply chain. We consider that the timing of price rises for materials should be factored into the base year, this is not the case for labour. Our price growth ranges between 0.30 per cent and 0.98 per cent for each year in the 2024–29 regulatory period.

Productivity – this takes into account our commitment to you to improve the efficiency of our business. We have assumed an annual productivity improvement of 0.50 per cent for each year of the next regulatory period.

We contracted BIS Oxford Economics to provide us with their forecasts of trends and used them as we considered applicable for our Proposal – see **Attachments 9.04 and 9.05** for detailed reports from BIS Oxford Economics.

We estimate opex for 2023–24 by applying the AER's base-step-trend methodology. We do this by rolling forward the efficient level of opex in 2022–23 by one year. This is different to the AER's usual approach to forecasting operating expenditure for the final year of a regulatory period. We have adopted a different approach because we think the AER's standard approach is unlikely to produce a realistic estimate of actual operating expenditure for 2023–24. Our approach ensures a consistent, AER approved methodology is used to forecast operating expenditure for the last year of the 2019-24 regulatory period and over the 2024–29 regulatory period.

Other costs not captured in the base year (step changes)

We have identified several other items that will affect costs over the 2024–29 regulatory period. These costs are not captured in the base year, but need to be included to ensure we comply with our regulatory obligations and continue to deliver the services in the way you value. Therefore, our base year opex has been adjusted to account for the following step changes:

Cloud computing – the changes reflect an accounting change which means some cloud computing costs that were previously in capital expenditure are now treated as opex.

Insurance – insurance premiums, particularly for bushfire cover, have increased materially in response to global climatic events and tightening market conditions.

Future network – this reflects increased investments in data and systems to improve power quality and enable more renewable generation and customer electricity exports onto our network.

Guaranteed Service Levels (GSL) – changes in our licence conditions mean that GSL payments are forecast to increase.

Property and fleet – savings delivered through investing in solar panels at 20 depot sites and moving a portion of light and heavy vehicles to electric vehicles, where it is cost effective to do so.

Whilst we are anticipating increases in information technology expenditure, these have not been reflected as a step change as we intend to absorb these costs within our base step trend outcome.

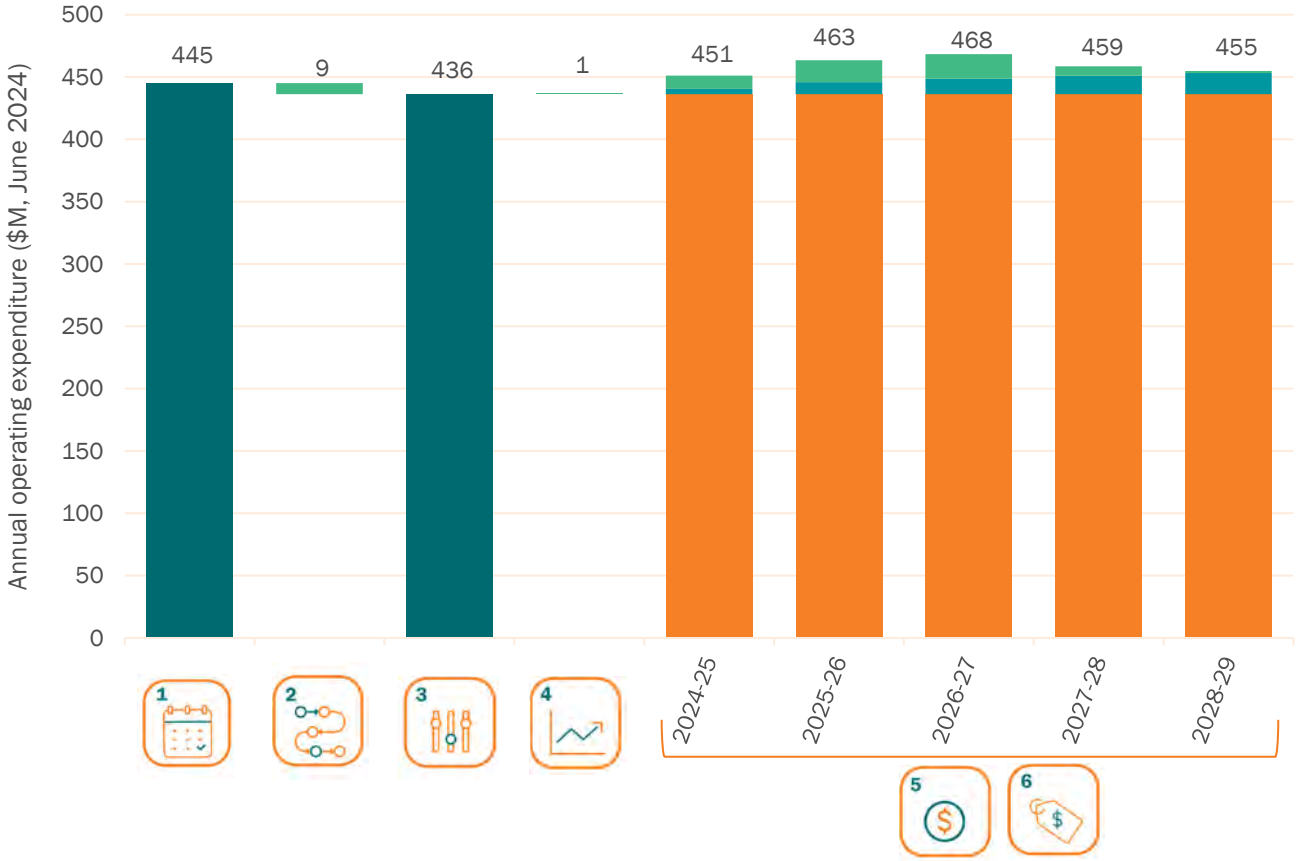
Determine forecast operating costs

The final step is to apply the trends and steps above, to each year of the 2024–29 regulatory period so that the resulting forecast reflects likely changes in future operating costs.

The chart below shows how the base step trend approach has been used to calculate our proposed operating expenditure for the 2024–29 regulatory period.

Despite our total opex being slightly higher than last period, each year of our forecast is efficient in relation to the most recent AER benchmarking report.

How proposed operating expenditure is calculated using the base-step trend approach



10

Capital expenditure

Chapter summary

- We are investing to deliver a resilient, safe, reliable and affordable network that is fit for the future
- We are managing our assets with an eye to cost, value and your future network needs

Capital expenditure

Our 2024–29 capital expenditure (capex) plan will help us deliver a safe, reliable and resilient electricity network. We plan to invest in connections, replacement expenditure (repex), augmentation expenditure (augex) of network assets, and a new category of assets related to non-network solutions. We also plan to invest in assets that support energy distribution, such as our vehicles, technology and property. Our spending will set us up to best meet your needs in the rapidly evolving energy market. Our capex proposal is guided by our Strategic Asset Management Plan which is found in **Attachment 10.01**.

We have categorised our capital expenditure proposal under two broad categories: system and non-system. System costs are for activities carried out directly on the network system. Non-system costs are for functions that indirectly support the network system. These costs have been allocated in line with the methodology used for allocating costs across our business, as shown in **Attachment 9.01**. Export Services is a new category and reflects the changing need for our network to facilitate customers' exports. We expect that this will be a growing category.

System costs

Repex
Increasing investment to reduce risk and improve resilience

Augex
Meeting future demand and improving resilience

Connections
Supporting the expected increase in connections to our network

Export Services
Transforming our network to facilitate customers' exports

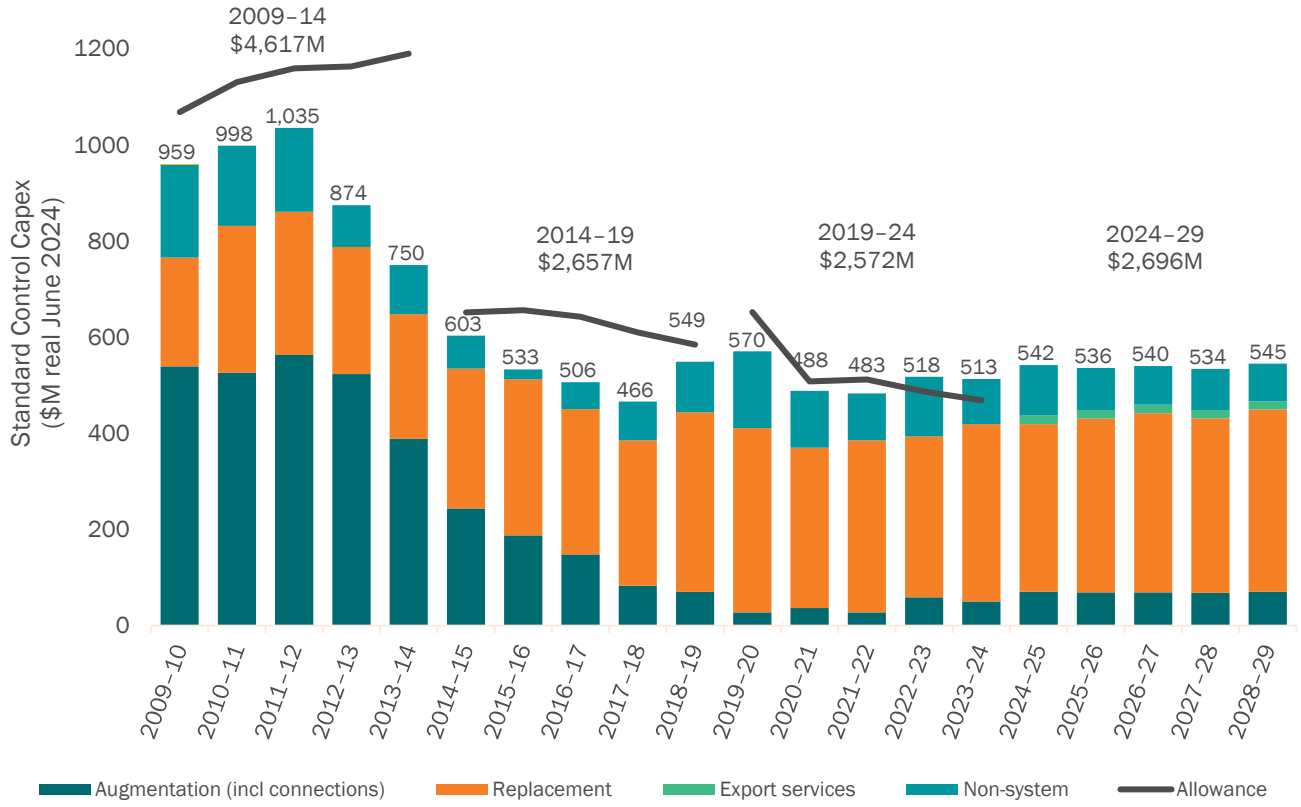
Non-system costs

ICT
Reducing capex as we bring in Software as a Service (SaaS) and reap the benefits from previous investments

Fleet
Replacing our light vehicles with EVs, where more efficient to do so – will reduce emissions

Property
Maintaining the health of our building assets, and installing solar panels for lower carbon emissions

Proposed capital expenditure compared to historical expenditure



In 2024–29, total capex is forecast to be 5 per cent higher than capex in 2019–24. In our Draft Proposal we had called out that our expected capex across 2024–29 was more than 20 per cent higher than what we were spending in 2019–24. We are relieved to share that that level of increase was incorrect, and 5 per cent is the correct level of increase. That value was obtained via an incorrect chart field, which was not used elsewhere in our Draft Proposal – the underlying modelling and values discussed with customers were still correct. This is primarily due to increased expenditure for resilience and future network related spend to ensure we can efficiently deliver electricity into the future.

Proposed capital expenditure by category ($M real June 2024)

	2024–25	2025–26	2026–27	2027–28	2028–29	Total 2024–29
Replacement	349	361	373	363	379	**1,825**
Augmentation	48	47	47	47	50	**239**
Connections	22	22	22	21	21	**108**
Export services	18	18	18	17	17	**88**
Total system capex	**437**	**448**	**459**	**448**	**466**	**2,260**
ICT	37	30	25	22	25	**139**
Fleet	38	37	36	39	33	**184**
Property	25	16	14	14	15	**84**
Capitalised Leases	1	2	2	7	3	**15**
Other	3	3	3	3	3	**14**
Total non-system capex	**105**	**88**	**80**	**86**	**78**	**437**
Total capex	**542**	**536**	**540**	**534**	**545**	**2,696**

Numbers may not add up due to rounding

Establishing an appropriate level of expenditure

To develop our capex forecast, we established a baseline using our business-as-usual portfolio of projects. This baseline includes maintaining the longest network in the NEM, with the fewest customers per kilometre. As we described in **Chapter 3 – About Essential Energy**, the use of benchmarking has limitations when comparing between rural and urban networks – this is particularly relevant for capex. The benchmarking for capex efficiency should not be viewed in isolation.

Building on this baseline, we then engaged with you and other stakeholders to understand your preferences and willingness to pay for investment options. From there, we refined our forecasts to ensure we could meet your expectations for delivering network services.

We're directing our capital investments to where they will deliver the most value to you – in accordance with the preferences that you shared with us during customer forums. We're prudently managing our existing asset base through carefully targeted replacement and refurbishment programs, including:

- optimising our repex investments – focusing on replacing infrastructure that will deliver the most benefit
- increasing our spending on network and community resilience – improving our preparedness and ability to respond to major weather events and assisting our communities to recover
- increasing our augex investments – updating our network to meet future demand and increasing electrification
- increasing our connections capex – supporting the increased volumes of new connections to our network and contributing to shared networks
- investment in export services – ensuring our network can facilitate growing levels of customer exports
- continuing to invest in non-system assets – reducing our carbon emissions by, for example, gradually replacing our fleet of vehicles with EVs and installing solar panels on depot roofs.

Essential Energy's Expenditure Forecasting Methodology 2024–29 provides more detail on the methodologies we used to forecast capital expenditure.

Engagement

We've engaged extensively with you and other stakeholders (see **Chapter 4**). This process determined your priorities in relation to the pace of investment and preferred outcomes. What we heard is summarised below.

Resilience

You believe that we need to build a more resilient network and continue our work with communities impacted by extreme events. This will involve installing composite (fire resistant) power poles; undergrounding some high-risk powerlines; installing SAPS, which will supply continuous power even when the rest of the grid is down; supporting microgrids; improving communications; and supporting our communities as they recover from natural disasters. We have included the cost of these initiatives in this Proposal – the capital expenditure for resilience is $229 million over 2024–29. Refer to **Chapter 6** for further detail, as well as **Attachment 10.06 – Resilience Expenditure Overview.**

'Essential Energy proposing emergency hubs and the other initiatives are going to be critical for communities. If we are trying to minimise trauma and if we can afford it, we should be going for Option C [more resilient].'

Advocate participant, Phase 3

'As someone who is highly impacted by natural disasters … we wouldn't have had half the problems if some of these things were in place. So, I prefer the higher option, especially for improving communications during events, as if [communications are] lost that's a huge issue for communities.'

Taree participant, Phase 2

A network fit for the future

The majority of you supported investing in smart solutions that address potential problems before they occur. 'Smart' transformers and real-time monitoring will increase your ability to **maximise your solar exports** and help us respond faster to **power-quality** issues. We have included the cost of these initiatives in this Proposal – the capital expenditure for Future networks is $126 million over 2024-29. Refer to **Chapter 7** for more information on these plans.

'Investment earlier will improve things in the future.'

Aboriginal and Torres Strait Islander participant, Phase 3

'I chose [option] C primarily because I think it benefits those with solar. I'm looking into it but haven't done anything yet and would want to make sure I can export if I generate more than I use.'

Wagga Wagga participant, Phase 3

Reliability

Overall, you are happy with our network's current level of reliability. As a result, improvements to reliability are not supported, apart from some targeted investments for customers in segments of our network who suffer from very poor reliability. This received support from 91 per cent of participants during one of our engagement forums.

'16–20 hours would be okay as I have a small solar system here, so I can get by with the basics for a little while.'

Wagga Wagga participant, Phase 2

'I think it depends on what time it happens. Afternoon or evening with kids means a big impact.'

Ballina participant, Phase 2

Lowering our environmental impact

We also discussed with you whether we should use solar panels and batteries to power our depots and transition our fleet to EVs to reduce our impact on the environment. These preferences would impact our forward investment plans for our non-system assets (that is, fleet and property).

> 'There comes a point in time where everyone will have to reduce their footprint.'
>
> *Broken Hill participant, Phase 3*

> 'There may be benefit in doing it a bit slower, only for the electric vehicle part. They should wait for these to become more efficient. Solar can be as soon as possible.'
>
> *Dubbo small business participant, Phase 3*

How we reflected your views in our capex forecasts for the 2024–29 regulatory period

We're adopting the use of composite power poles that can withstand significant heat to improve resilience to bushfires

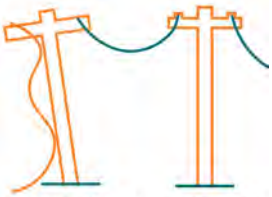
We're undergrounding overhead powerlines in high-risk locations to minimise exposure to bushfires and storms

We're commissioning microgrids and SAPS to increase resilience to fire and storms for remote customers who suffer from long outages

We're installing solar and battery–powered backup at key radio sites so we can more quickly restore service to customers

We're investing in strategic spares so we can replace damaged equipment faster, allowing us to restore service sooner

We're supporting community resilience with portable lighting, portable depot and a community hub, solar panels, batteries and generators



We're renewing our commitment to proactively address reliability for our worst-served customers

We're continuing to transition our fleet to EVs to reduce our emissions and deliver better environmental outcomes

We're investing in solar photovoltaic (PV) at our properties to reduce our carbon emissions and to reduce our electricity costs

We will make enabling investments in information and communications technology (ICT) to support our CER-related programs

Our capital expenditure plan

We have designed our proposed capital expenditure plan for the 2024–29 regulatory period to serve your long-term interests, while allowing us to adapt to our changing role in an evolving electricity industry.

To reduce pricing pressures, we sought to understand the trade-offs you were willing to make and the investments you were willing to pay for. Our plan directs expenditure to where it will deliver the most value, while ensuring we invest at a pace you support. We have provided a list of our investment cases for proposed material assets in **Attachment 15.10** – they demonstrate our compliance with the NER requirements for forecast capital expenditure.

We describe the various proposed capital expenditures by category below.

Replacement


Repex

Repex covers the cost of replacing and refurbishing assets. This includes replacing defective assets with modern equivalents after they have failed, as well as replacing assets pre-failure where it is cost-effective.

Our total forecast repex during the 2024–29 regulatory period is $1,825 million as shown in Replacement Expenditure Overview in **Attachment 10.02**. Key drivers during the period include:

- our continued focus on higher-risk asset classes, including power poles and pole top equipment
- maintaining overall risk levels by keeping our levels of investment for most of our asset classes broadly consistent with investments in the previous regulatory period.

Changes in this category relate to:

- our transition to alternative materials, such as composite poles, to improve our resilience to fire, weather events and termite infestation
- our plan to underground overhead powerlines in high-risk locations to minimise exposure to bushfires and storms
- our deployment of SAPS, where economically viable, to address pockets of poor reliability and to improve resilience to fires and storms.

Please note that where applicable, we will follow the regulatory investment test for distribution (RIT-D) process for relevant programs to ensure we are undertaking the most efficient investment in the long term. We have recently undertaken this process for the Master-Subtractive Metering Rectification project which involves opex and capex in the current and future regulatory periods[9]. It is likely that our proactive composite pole replacement program and SAPS deployment program will also follow the RIT-D process.

Augmentation


Augex

Augex includes capex for demand and capacity driven reinforcement, extension and enhancement of the network. Non-demand-driven augmentation focuses on safety and compliance programs, network metering and monitoring, and ensuring we have adequate powerline protection.

Our total proposed augex during the 2024–29 regulatory period is $239 million as shown in Augmentation Expenditure Overview in **Attachment 10.03**. Key drivers during the period include the need to:

- deliver network upgrades to address both existing and forecast thermal and voltage constraints
- target improvements for customers on our worst-served feeder segments (in terms of network reliability) by refurbishing existing network and installing protective devices
- invest in microgrids to increase resilience at sites susceptible to extended outages due to fire and storms
- invest in solutions to support communities during extended outages, including portable lighting, solar PV, batteries, switchboards and generators.

[9] Essential Energy, *Final Project Analysis Report – MSM*, April 2022 Link

Connections

Connections includes capex related to the connection of new customers to our network. Our total proposed Connections capex (net of contributions from customers) during the 2024–29 regulatory period is $108 million as shown in Connections Expenditure Overview in **Attachment 10.04.01**.

Connections

The key driver is an increased forecast in the number of customer connections in the coming regulatory period – this is discussed further in **Chapter 11 – Energy and demand forecasts**. Increasing customer numbers helps share our network costs across a larger base, thereby reducing network charges for everyone. Customers support us assisting with connections funding where the benefits outweigh the costs – **Appendix A – Summary of engagement outcomes.**

Our updated Connection Policy reflects a user-pays requirement, such that when a specific service is provided to benefit an identified user then they should pay for the cost of that work, keeping overall bills lower for other customers. This policy is included in **Attachment 10.04**.

Export services

Export services includes capex to specifically develop our network's hosting capacity to manage increased energy exports to the grid from those of you who have invested in CER, such as solar panels or batteries.

Export services

Our forecast system capex to facilitate CER on our network during the 2024–29 regulatory period is $88 million, as shown in the Future Network Business Case Overview in **Attachment 10.05.**

We have identified a range of capital investments in this area that make sense for our business, including:

- upgrading targeted powerlines to increase thermal capacity
- replacing selected distribution transformers and adding on-load tap changers
- investing in real time network monitoring to see what is happening on the low voltage network (network visibility), this includes software and systems to enable CER adoption.
- enabling flexible export limits to allow more renewable energy to be exported into the network
- installing battery energy storage systems on the low-voltage network.

Information and communications technology (ICT)

ICT includes capital expenditure related to upgrading and rationalising existing legacy systems. This includes both recurrent and non-recurrent investments. Refer to **Attachment 10.07** for our ICT business plan.

Information Technology

Our total forecast ICT capex during the 2024–29 regulatory period is $139 million. This comprises:

- **Recurrent capex:** Spending on hardware and recurring updates of ICT systems and tools (broadly consistent with the previous regulatory period).
- **Non-recurrent capex:** Spending to maintain or expand capability. Expenditure is significantly lower than the 2019-24 regulatory period as we start to see a return on the major investments we have already made. These include replacing legacy Peoplesoft enterprise resource planning (ERP) and asset management systems with new generation Oracle Cloud solutions. The use of cloud computing has also meant that expenditure associated with implementation or upgrades is now treated as an operating expense – see **Chapter 9** – rather than as a capital expense.

Fleet

Fleet includes capex for the replacement and refurbishment of heavy plant, and the replacement of light commercial vehicles and ancillary assets. See **Attachment 10.08** for our fleet business plan.

Fleet

Fleet total forecast capex for 2024–29 regulatory period is $184 million.

We're keen to ensure all fleet asset classes are fit-for-purpose and fitted with the latest safety technology. These investments are aligned with your feedback during engagement forums.

During customer engagement there was strong support for moving to electric vehicles where it was cost efficient to do so. Also reflecting feedback to improve community resilience, we have included a targeted towable class of investment (such as a portable depot, community hub and lights) to support ongoing community resilience.

Key expenditure drivers are:

- continued investment in alternate propulsion technologies (for example, EVs, plug-in hybrid vehicles, fuel cell EVs), and we're committed to quickly adopting proven efficient technology. These changes should reduce our emissions by 10,300 tonnes of CO^2 equivalent over 2024–29
- continued portfolio investment to manage asset age profile and stabilise year-on-year capex across core asset classes
- targeted investment in heavy fleet substituting light fleet assets
- continued enhancement of mobile asset management systems and processes
- continued smoothing of heavy plant replacement cycle.

'...if people can see the electricity companies are going solar and using electric cars they will think, 'If they can do it, so can we.' It works out better for the environment and for the future.'

Aboriginal and Torres Strait Islander participant, Phase 3

Property

Property includes the renewal of and capital investment in buildings and other non-network property assets.

Property

Our total forecast property capex for the 2024–29 regulatory period is $84 million.

Property capex is broken down into four key streams: security, compliance, asset renewals and major capital works. Asset renewals and major capital works are driven by analysis of the asset's health and condition. We aim to balance asset criticality and health to achieve the best-value scenario with minimum acceptable levels of investment – see **Attachment 10.09** for details of our property business plan.

Proposed property capex includes:

- a major capital works program with business-driven investments of high priority
- asset renewals for end-of-life critical infrastructure assets with building elements rated as 'Poor'.

Complementing this are capital investment inclusions for physical security infrastructure and compliance.

During engagement forums, we identified that you support initiatives to lower our environmental impact. We presented options relating to the level of solar investment with associated returns, with the preferred investment included in the major capital works program noted above. Associated savings in electricity charges are included in our operating expenditure forecast in **Chapter 9**. This initiative will also reduce emissions, saving around 5,400 tonnes of CO^2 equivalent over the 2024-29 period.

'If people can see the electricity companies are going solar and using electric cars they will think, 'If they can do it, so can we.' It works out better for the environment and for the future.'
Aboriginal and/or Torres Strait Islander participant, Phase 3.

New investment is proposed in FY25 to relocate the Lismore depot. This is due to the extent of the 2022 flood damage and to mitigate the potential for a key property asset to be impacted in the future.

11

Energy and demand forecasts

Chapter summary

- Our detailed forecasts support better investment and operating decisions
- We forecast continued growth in customer numbers and consumption, consistent with historical trends
- We expect growth in solar panels and batteries will reduce invoiced consumption, but this will be more than offset by significant future growth from new technologies, including EVs and electrification

Overview

We have developed forecasts for maximum demand, energy consumption, customer numbers and smart meters for the 2024–29 regulatory period. Maximum demand (or peak demand) is a measure of the highest total energy use at a single point in time – our network is designed to ensure we can supply enough energy to meet all your needs at such a time. Energy consumption is a measure of all customers' total energy use over time, regardless of how much is used at any one time.

To ensure our distribution network has the capacity to meet your growing and changing needs, we engaged Frontier Economics to develop forecasts of consumption, and maximum and minimum demand, until 2037. These forecasts are included in **Attachment 11.01 – Forecasts of customer numbers, energy consumption and demand** and consider:

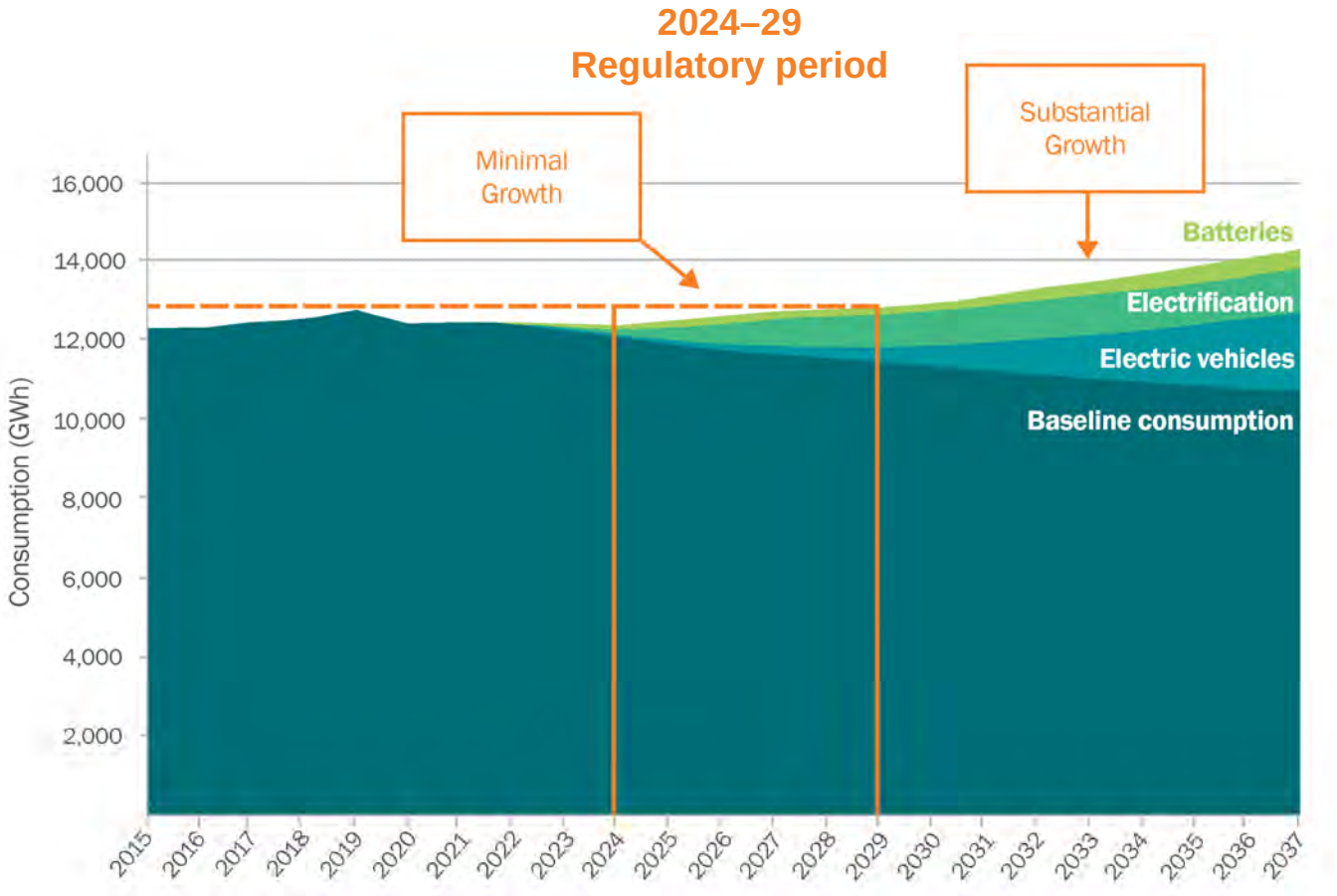
- traditional drivers of demand, which are relatively predictable
- technology-induced drivers of demand that are expected to significantly change; for example, rooftop solar panels, batteries, EVs and electrification (conversion of appliances that use non-renewable fuels, such as natural gas, to electricity).

The chart below shows electricity consumption on our network since 2015 and a 15-year forecast, from 2022 to 2037.

Baseline consumption from the grid is forecast to decline from 2022 onwards as more of you invest in CER, such as solar panels and batteries. This will further contribute to power quality issues.

The chart also shows minimal overall growth in consumption from 2024 to 2029, as the composition of consumption changes significantly in response to the continued take up of new technologies and increased electrification. We must be able to adapt to these changes. Substantial growth is forecast to begin in the following regulatory period, which is a key input into how much we should be investing to prepare for this change.

Electricity consumption from 2015 and forecast consumption to 2037



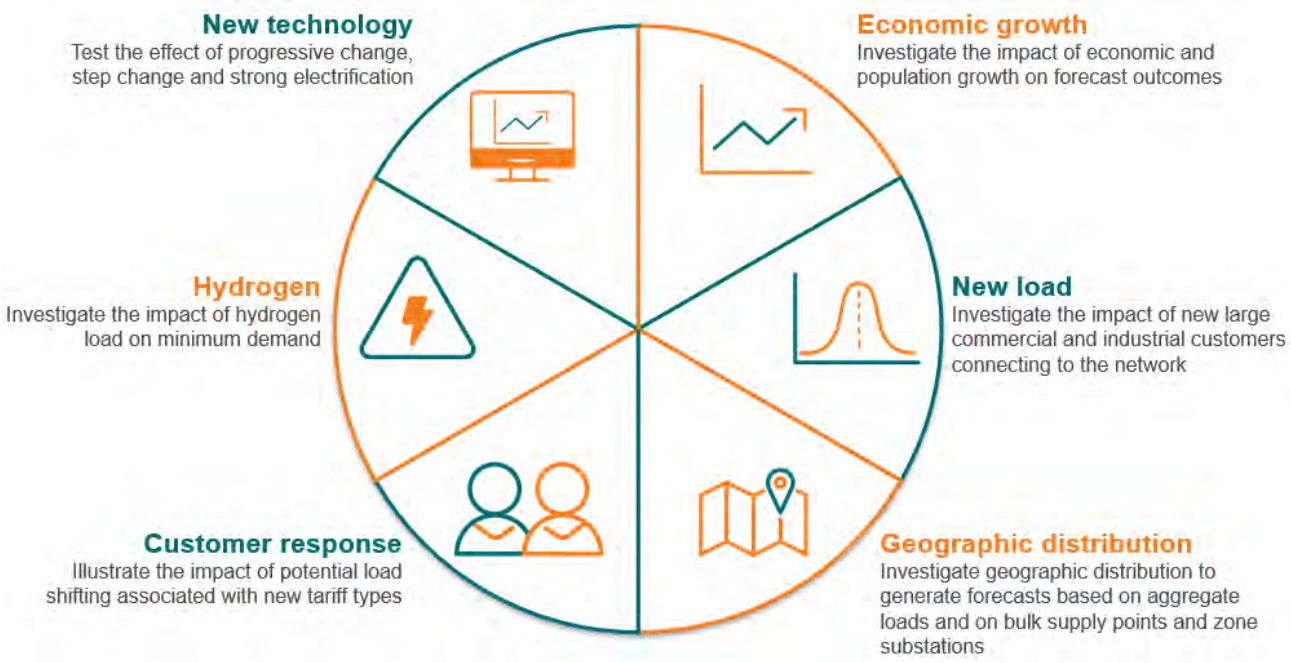
Our forecasts for 2024–29

	2024–25	2025–26	2026–27	2027–28	2028–29
Consumption (GWh)	12,429	12,560	12,716	12,766	12,836
Customer numbers	897,609	904,723	911,848	918,978	926,108
Maximum demand (summer) (MW)	2,239	2,265	2,298	2,322	2,339
Maximum demand (winter) (MW)	2,384	2,412	2,448	2,471	2,488
Minimum demand (summer) (MW)	479	435	401	356	308
Minimum demand (winter) (MW)	448	406	371	325	275
Smart meters	344,191	400,254	457,194	515,013	573,709

How we develop our forecasts

Historically, electricity consumption and demand has increased over time due to increases in the population and our customer base, and growth in economic activity. However, these factors have changed in recent years. The diagram below shows the key factors considered in our scenarios for forecasting future consumption and demand.

Key factors we examined that affect consumption and demand



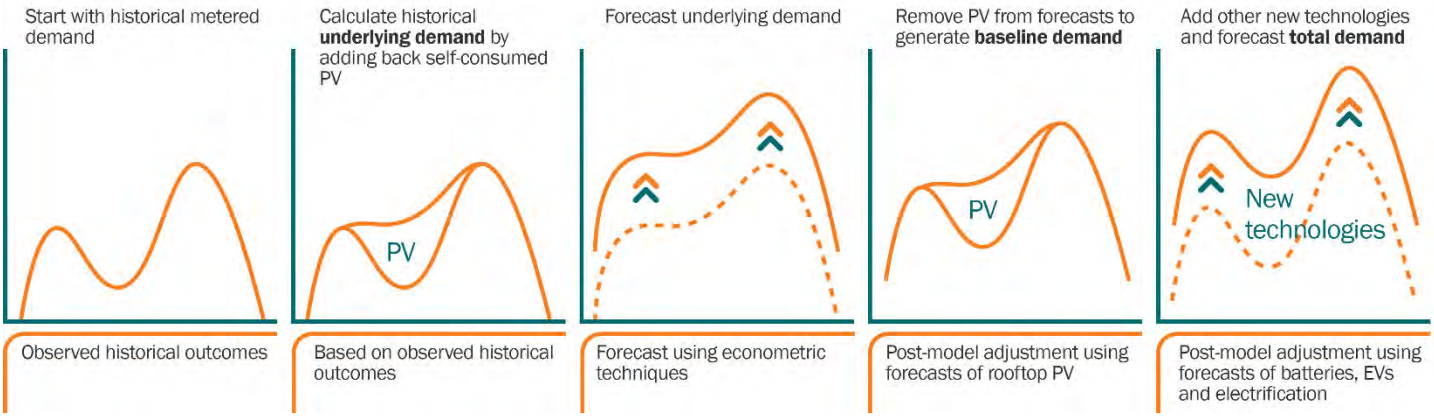
For forecasting purposes, electricity demand can be broken up into two parts, which are:

- Demand that varies due to long-established drivers such as time of day, weather, population growth and economic activity. The traditional drivers of demand are relatively predictable and econometric approaches can be used for forward projections.
- Demand that varies due to uptake of new technologies in the home or business (for example, rooftop solar PVs, batteries, EVs, and energy-efficient lighting and appliances) and electrification – which depend on uptake and will change usage patterns. This means they need to be assessed independently and 'added on' to the traditional forecast component via a post-model adjustment.

The uptake of new technologies is an increasingly important component in energy demand and is expected to be the main driver of demand trends into the future. It will affect peak and minimum demand, as well as overall energy consumption.

Our demand forecasts have been developed to ensure they are consistent with the Australian Energy Market Operator's (AEMO's) methodology and forecasts. Combining traditional and technology-induced drivers of demand, our forecasts have been prepared using the following approach:

Our forecasting model



Technology uptake

We have adapted AEMO's forecasts of technology-induced drivers of demand to reflect the characteristics of our network area. This ensures our forecasts are based on the best publicly available information and facilitate scenario analysis. The graphic on the right shows the three scenarios we considered for technology uptake, based on the scenarios in AEMO's Integrated System Plan – low (progressive change), central (step change) and high (strong electrification).

'I think it should be mandatory that if you have the roof space you need to have it [solar panels].'

Ballina participant, Phase 1

Our three scenarios for technology uptake

Low: Progressive change

Net zero by 2050

Investment in renewable generation and storage starts slowly and picks up pace in the late 2030s and 2040

Central: Step change

Net zero by 2035

(most likely case, based on consultation)

Rapid transformation, with significant investment in renewable generation, storage and firming generation as coal plants exit

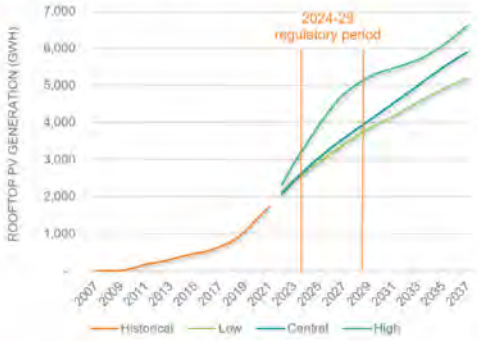
High: Strong electrification

Net zero by 2035

Stronger and faster electrification of transport and heavy industry (but with limited hydrogen uptake) supported by investment in renewable generation and storage

Roof-top Solar

We expect to see continued and consistent growth in roof-top solar capacity and generation for Essential Energy

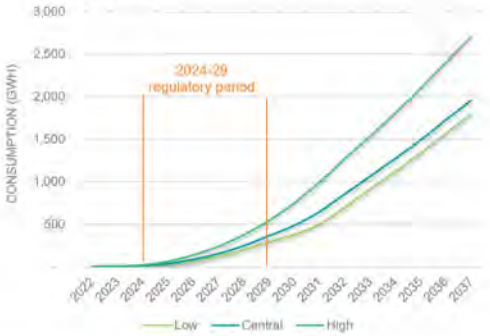


Battery Storage

We expect to see customers installing batteries at a moderate pace from 2024

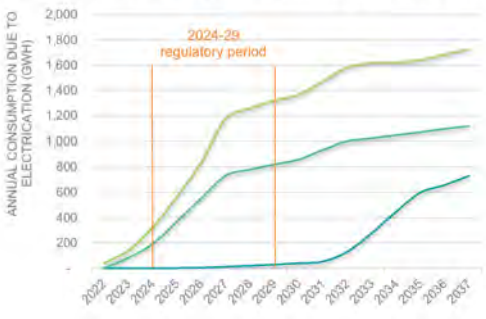
Electric vehicles

We expect to see significant increases of Electric Vehicles in NSW over the next 15 years, with uptake in regional and remote NSW lagging behind major cities and towns



Electrification

We expect to see customers converting appliances using non-renewable fuels (such as natural gas) to new electric appliances, for example, install reverse-cycle air conditioning to replace a gas heater or an induction cooktop to replace a gas cooktop



'But the benefits from solar are always the savings you get from your electricity bill and you're still a long way ahead of the game.'

Deep dive customer participant, Phase 3

'I love my solar panels, I can't believe how much I have saved with them. We need them everywhere. Scout halls, schools and hospitals. If we can reduce the costs for electricity supply then that money can go to schools and health.'

Broken Hill participant, Phase 1

'We are looking to go to more storage than exporting and looking for how we can reduce our reliance on grid power…'

C&I participant, Phase 1

'Even though they are not generators with innovative technologies there should be more sharing and benefiting from electricity. There should be big community batteries that absorb all the excess energy and distribute it at night at the local level.'

Bega participant, Phase 1

'I would like to see the technology for EVs to improve to the point where it's a possibility and a probability for rural people, but I don't see that being feasible.'

Inverell participant, Phase 1

'Starting to get consumer expectations and behaviours trained in the right direction in the early stages will be important. EV charging during the middle of the day or overnight – important to start normalising that behaviour during this reg period. If we get this wrong and the EV load turns up at 5pm then the network costs go up for everyone.

Advocate participant, Phase 1

'People don't understand renewable energy generation. The increase in diesel prices will make more people want to change to renewables – solar panels and batteries are becoming more and more appealing.'

Wagga Wagga small business participant, Phase 3

Our forecasts

Minimum and maximum demand

2,488 MW
Maximum demand by 2029

Historically, networks have been designed and built to meet peak usage (known as 'maximum demand'). With more technologies connecting to the network, a new challenge is emerging – minimum demand. Occurrences of minimum and maximum demand are inherently rare, taking place at extreme points in the year.

Satisfying demand means that at any given time we can supply the maximum amount of electricity you are all using, while balancing how much energy you are exporting to the network.

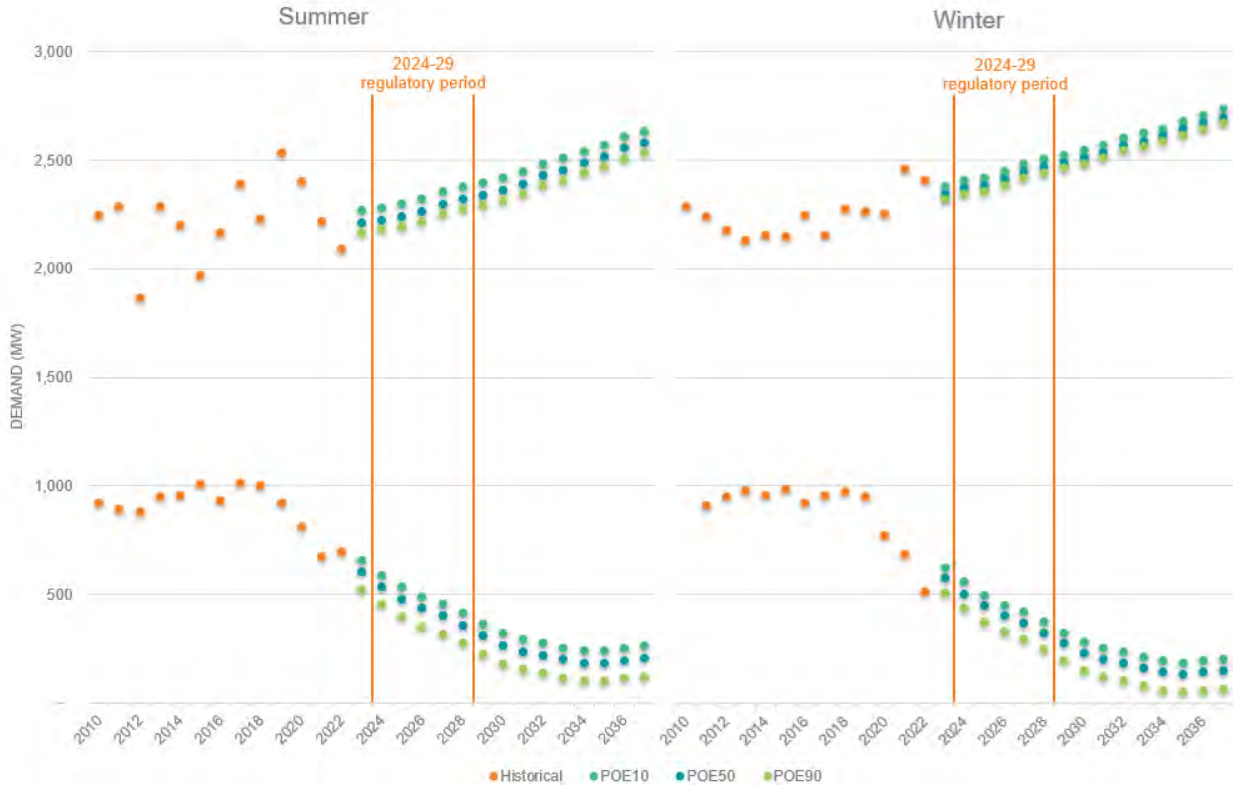
Maximum demand is typically driven by extreme weather events in winter or summer, with the winter peak more likely to exceed the summer peak. Demand forecasts are an input in our capital works planning and vary by location across our diverse network.

Minimum demand is typically driven by very sunny days when exports are greatest but not enough of that energy is being used.

Maximum demand on our network is likely to increase at a very small but steady rate each year over the next five years. We expect demand during our winter peaks to be higher than demand during summer peaks. This is because rooftop solar can reduce peak demand in summer by more than it can in winter. The level of minimum demand on our network is expected to fall each year over the next five years, driven by growth in exporting technologies connecting to the network.

From 2022 to 2037, maximum demand is forecast to increase to around 2,750 MW, while the minimum demand could head towards 0 MW, as shown in the Summer and Winter forecast demand charts below. They reflect the probability of exceedance (POE), for example, POE50 reflects that there is a 50 per cent chance that the outcome is higher that these point markers.

Minimum and maximum demand across 2009–21, and projected demand from 2022–37



The patterns of usage are also changing across a day. Historically, maximum demand has occurred around 6pm in both summer and winter. As rooftop solar capacity and battery uptake increase, the maximum network load is forecast to occur later in the day. By 2037, peak demand is expected to take place between 6pm and 7pm in summer and 5pm and 9pm in winter.

A similar trend is expected for minimum demand, as the expected summer minimum shifts from 10am in 2022 to 10am to 12pm in 2037. The winter minimum demand in 2022 occurs from around 9am to 1pm. The expansion of CER will move minimum demand away from the mornings to around 1pm by 2037.

Consumption forecasts

12,830
GWh by 2029

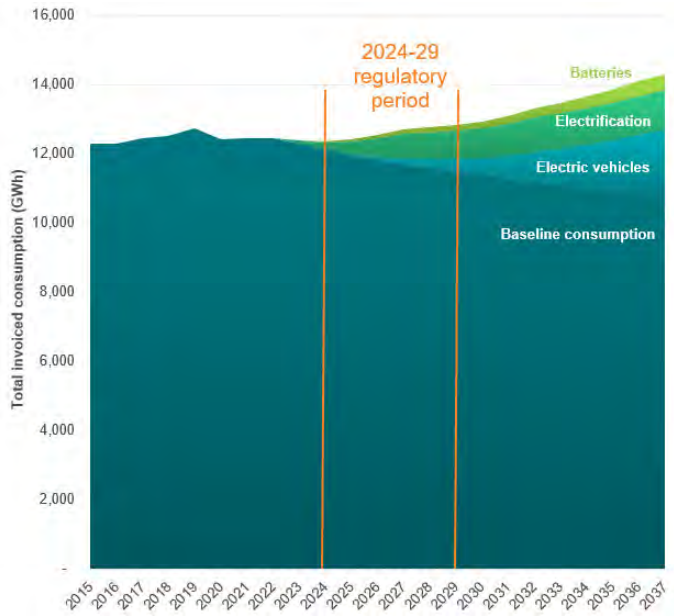
Distributors such as Essential Energy use electricity forecasts to plan our expenditure so it is prudent and efficient, and to set annual network pricing plans, so that we can recover the allowed revenue approved by the AER. We forecast that the total amount of electricity (GWh) you will use in 2024–29 will be slightly higher than during the 2019–24 regulatory period. This is mainly due to the uptake of new technologies, including EVs and the electrification of gas appliances.

The charts below show that from 2029, we see much higher growth in consumption, driven by:

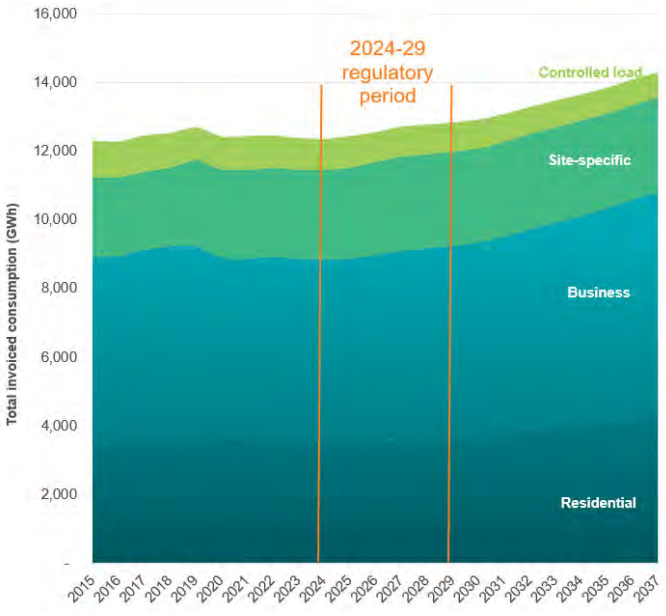
- projections for future use of small-scale solar systems and battery storage
- EV take-up rates
- electrification of natural gas and LPG appliances
- increasing use of more efficient appliances and lighting
- the economic outlook for our network in terms of the local economy and population.

Throughout the customer forums we ran for this Proposal, the majority of participants expressed a desire to be able to invest or access technological advances, most commonly solar, batteries, EVs and smart meters. This was especially evident in the future network vision that customers developed for their communities.

Effect of EVs, electrification and batteries on invoiced consumption across 2015–21 and projected consumption from 2022–37



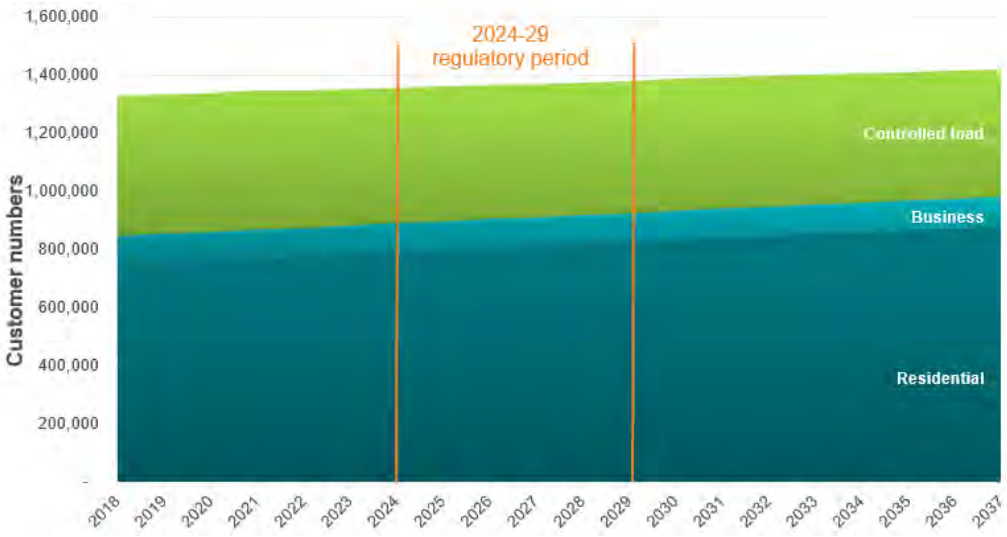
Total consumption by customer segment across 2015–21 and projected consumption from 2022–37



Customer number forecasts

926,000
customers by 2029

Customer numbers are forecast to increase over the next 15 years, consistent with the growth seen in the historical data and the ongoing population growth in our network area.



We use this information for planning and forecasting the expenditure required for network improvements and connections. In 2024–29, we forecast that our customer numbers will grow by 7,100 (0.8 per cent) per year. By 2029, we expect around 926,000 customers will be connected to our network. A large number of our customers also have a secondary controlled load tariff (separately metered), as shown in the chart above.

Smart meter penetration forecasts

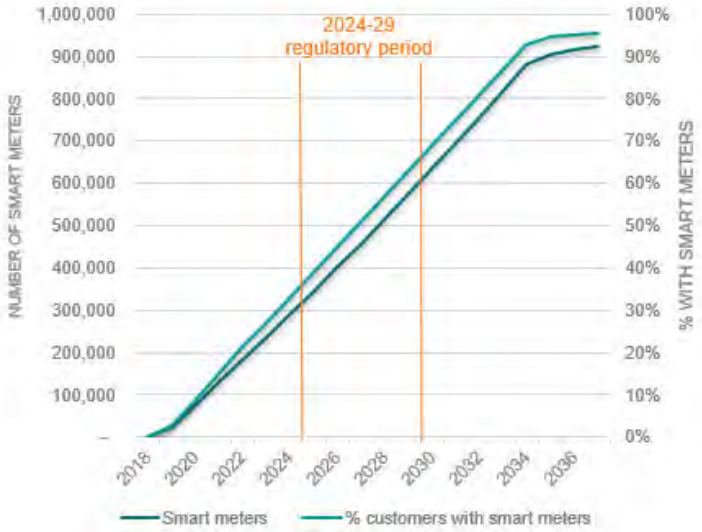
A smart meter records how much electricity is used and when, and communicates this information to the electricity retailer and network business remotely. It also enables two-way communication between the meter and retailer systems. Since 1 December 2017, retailers have been responsible for installing smart meters.

Based on historical installations, we forecast that more than 580,000 smart meters will be connected to our network by the end of 2029. This represents around 63 per cent of meters installed on small customers' premises across our network. So we must consider the role of smart meters when designing and implementing our pricing strategies. Our smart meter forecasts also form the basis for our projected metering expenditure in this Proposal.

The AEMC recently published a Draft Report into metering services[10] that recommends the universal uptake of smart meters by 2030. This is a much faster pace of uptake than we had forecast – it is not reflected in our Proposal or TSS. We will monitor the progress of this review and include any finalised outcomes in our Revised Proposal to the AER in late 2023.

Most participants at our customer forums supported smart meters as they help people to control their usage. Smart meters were seen as a prerequisite for achieving the vision of the future network, given their interaction with smart appliances, home energy management systems, virtual power plants and peer-to-peer trading. Only a handful of customers were sceptical of the technology.

Number of smart meters and percentage of customers with them



'I love this one because it can record the electricity use, when we use it, what day we use too much. The other meter just builds up with no extra information. With the smart meter we know why we get that much bill.'

Culturally and linguistically diverse participant, Phase 1

'I can set off my machine without any extra technology. There is a problem with the supply of smart meters which we probably have to put aside.'

Deep dive customer participant, Phase 3

[10] AEMC, *Review of the Regulatory Framework for Metering Services, Draft report*, 3 November 2022

12

Our approach to pricing

Chapter summary

- Our transition to two-way pricing will help us to reduce our overall costs and network prices in the long term and improve fairness
- We will empower you to save money by choosing when you use (and export) energy
- During the 2024–29 period we expect network charges will increase by an average of 2.97 per cent per annum before inflation

How we approach pricing

Over the past two regulatory periods, we have gradually transitioned to pricing structures that better reflect the costs of providing network services. This will help us to reduce our long-term average prices.

Our 2024–29 TSS (**Attachment 12.01**) explains what our network charges mean for you over the regulatory period. The AER uses our TSS to assess our compliance with the NER, which require that network charges reflect the efficient cost of providing network services.

When setting our prices, we consider:

- our role in energy supply
- how use of the network will evolve
- what our network is capable of now and what it will require in the future, and
- how our prices can encourage you to help lower future costs.

Introducing two-way pricing is part of our efforts to lower costs and improve fairness. Everyone benefits from lower consumption charges and customers who export will be rewarded for exporting during evening peak consumption periods and encouraged to avoid doing so at times when there is excess electricity in the system (around the middle of the day).

Our role in the electricity process

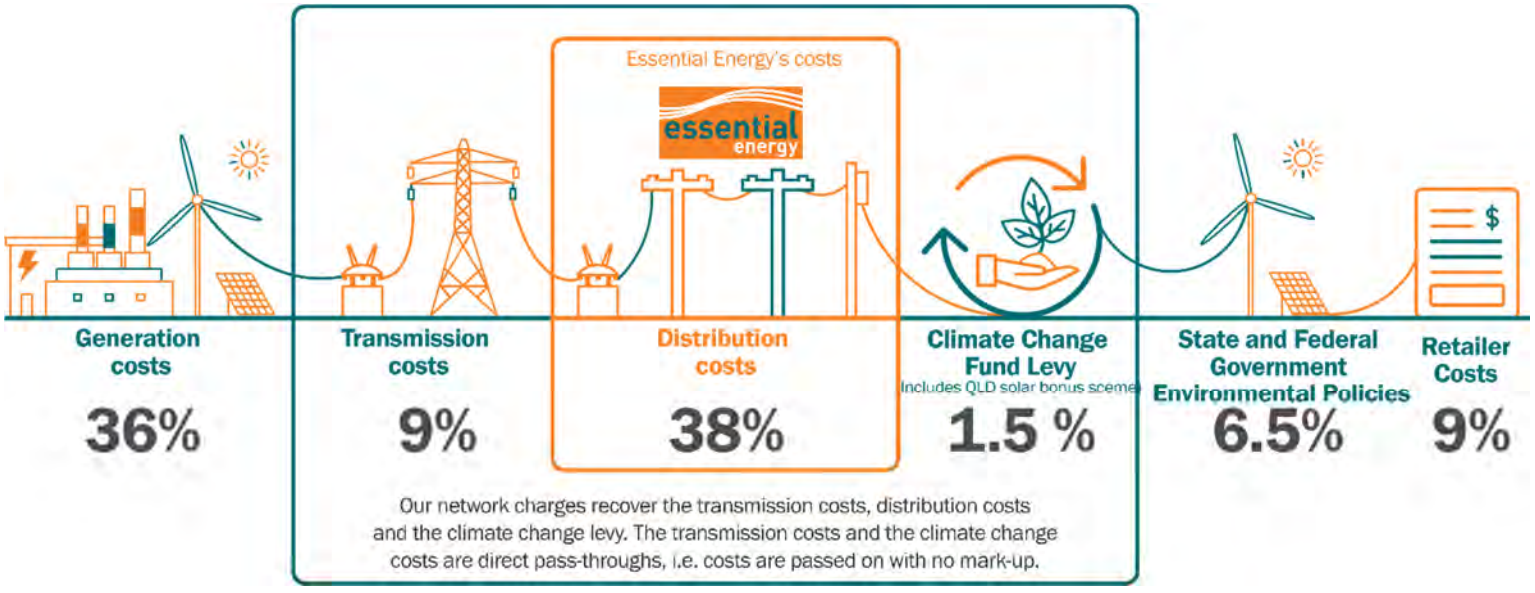
We are an electricity distributor, so our prices are just one part of your total bill. The costs we recover through our distribution tariffs represent our costs to operate and maintain the distribution network.

Your bills show our charges bundled with:

- transmission costs, which are also regulated by the AER. These costs are passed on by Transgrid and Powerlink, the operators of the transmission networks that our distribution network connects to, and
- the NSW Government's Climate Change Fund levy and contributions to the Queensland Government's Solar Bonus Scheme. In future, there will also be contributions to the costs of the NSW Roadmap and the anticipated NSW Green Hydrogen Exemption Scheme.

Unless you are a large business, you won't see our network charges on your bill. These are paid directly to us by retailers who build our costs into the prices they charge you.

Composition of your bill and the costs we recover through our network charges

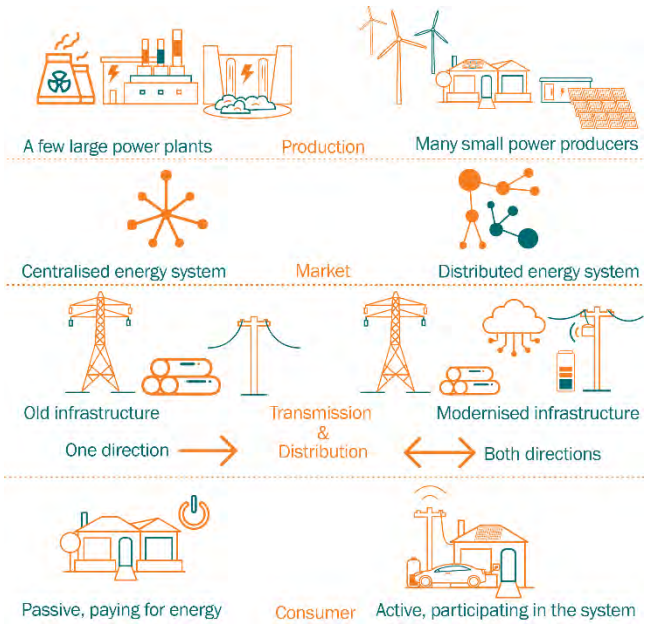


* Based on the 2021–22 forecast, Australian Energy Market Commission, Residential Electricity Price Trends 2021, 25 November 2021 p. 10. Note that recent energy market conditions may significantly alter these percentages in the future – generation costs are likely to make up a higher share of your bill and other components will be lower.

Characteristics of our market

The electricity industry is in a period of unprecedented change, driven by innovations that allow you to choose to source and use energy in different ways, the push to decarbonise our energy supply, and the increased decentralisation of the energy supply chain.

Signs of change in the industry



As these changes occur, we expect that more of you will actively invest in new technologies and change your energy sourcing and usage behaviours. Others among you will be more passive and continue to use energy in much the same way as you do today.

We need to ensure our price structures are suitable, whatever your approach – that way we can best support everyone's long-term interests. Doing this means designing network charges that recognise different electricity-related behaviours as well as the characteristics of our network, now and for the foreseeable future.

Our network and the way you use it

We have assessed our current network capacity, forecast demand for peak energy and peak exports, and options to efficiently meet these.

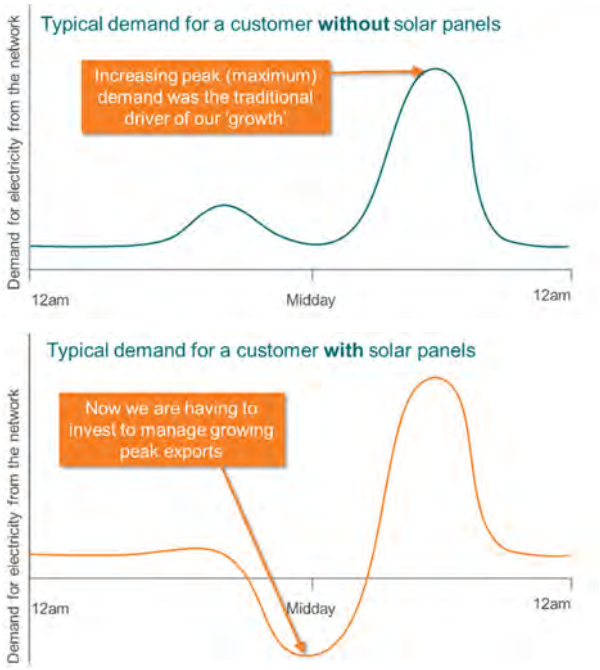
Your daily energy demands increasingly present two distinct cost drivers:

- **Peak demand** is when you are all drawing the most energy from our network.
- **Peak export** is when the energy exported by some of you in certain parts of our network exceeds demand for energy in those areas.

Historically, we have invested to meet peak demand, but now peak export periods are also driving up our costs – which is why two-way pricing has become increasingly important.

Think of your home as a tiny energy plant in a much larger network – the way you use energy and export it (from solar panels or batteries) can affect the efficiency and reliability of the larger network. Transitioning to two-way pricing and encouraging those of you who export to use more energy in the daily solar peak period will help reduce our overall costs and prices – ultimately benefiting everyone.

Electricity demand based on whether or not customers have solar panels



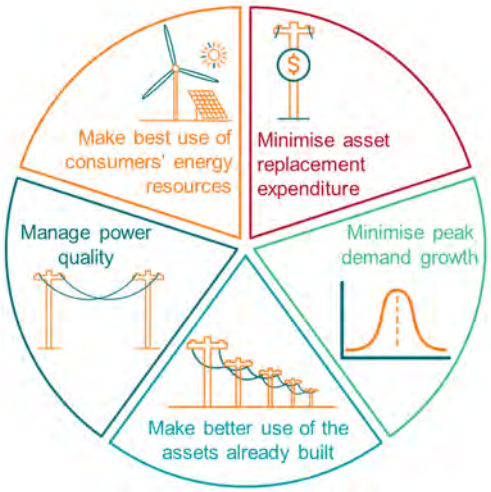
Prices can reflect the demands on our network at any time. Using prices to influence your electricity usage and the times you choose to export energy, is a relatively cheap solution and can defer (or even avoid) the need for increasing our investment in our network, which comes at a much greater cost to customers.

Pricing could also help to solve four of the five challenges our network faces (see below) by:

- encouraging you to use less energy during evening peak periods
- encouraging you to use more energy in the peak midday export period
- encouraging you to make better use of your self-generated energy and when you export

In turn, this will assist with managing power quality and make better use of the network assets we have already built.

The five challenges for our network



Your needs and preferences

Collaborating with you and other stakeholders has been integral to developing our approach to pricing and our TSS. Engagement began in 2019 when we embarked on the design of our trial tariffs for residential and small business customers. This was followed by workshops with some of our large, seasonal, and peaky load customers, a battery workshop as well as our 2024–29 Proposal engagement program.

Chapter 4 – Our Customer engagement and **Appendix A – Summary of engagement outcomes** provide more detail on our rationale and approach to this process.

Our customer engagement in relation to pricing

Our pricing principles

Our pricing approach is based on pricing principles we co-designed with you to provide a framework for transitioning to cost-reflective two-way pricing. These principles, which we developed during 2020 and 2021, are shown below.

In 2022, we used the principles to guide us as we assessed TSS issues and options with our PCC and in customer deep dives. These were also key to our export tariff transition strategy, explained below and set out in our TSS.

Our pricing principles

Principle	What this means
Avoid bill shock	Tariffs minimise the risk of bill shock for customers (especially vulnerable customers)
Easy to understand	Tariffs are relatively simple to interpret
Fair	Customers pay their fair share of network costs (cost-reflective)
Integrate renewables and new technologies	Tariffs accommodate changing technology, energy flows and greener customer choices
Effective	Tariffs do the job - they solve network issues and don't create new ones

Our tariff structures

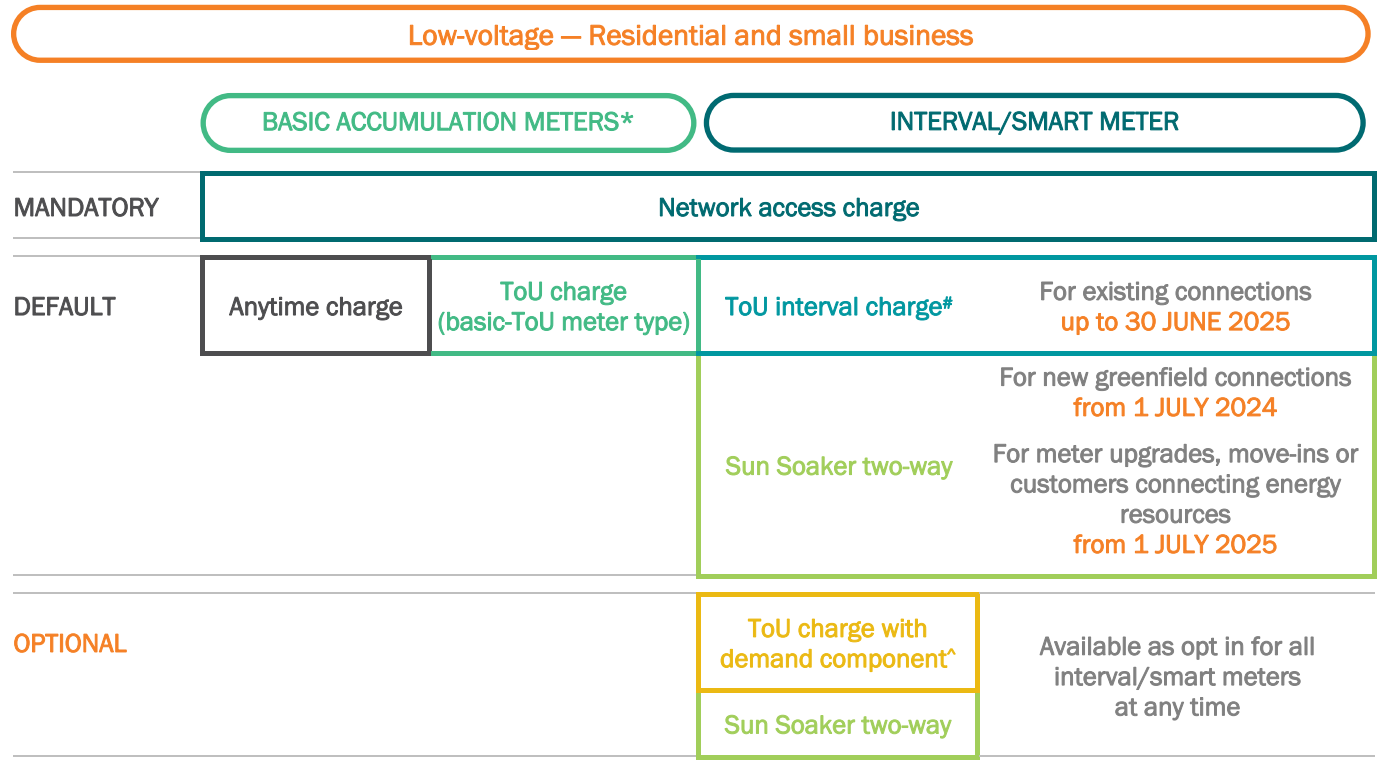
We will keep moving towards cost-reflective network charges

During 2024–29, we will continue transitioning to cost-reflective pricing. We expect the pace of this transition to be supported by policy reforms requiring retailers to hasten their roll out of smart meters. At this stage, our proposed tariff structures and assigned default tariffs reflect our own smart meter forecasts, that are much slower than that envisaged in the AEMC's recent *Draft Report into metering services review*. We will monitor this review and include the final outcomes in our Revised Proposal to the AER in late 2023.

If you are a residential or small business customer, you will continue to choose a tariff through your retailer.

The images below summarise our tariff structures and approach to assigning default tariffs for the 2024–29 regulatory period for small customers and large customers respectively.

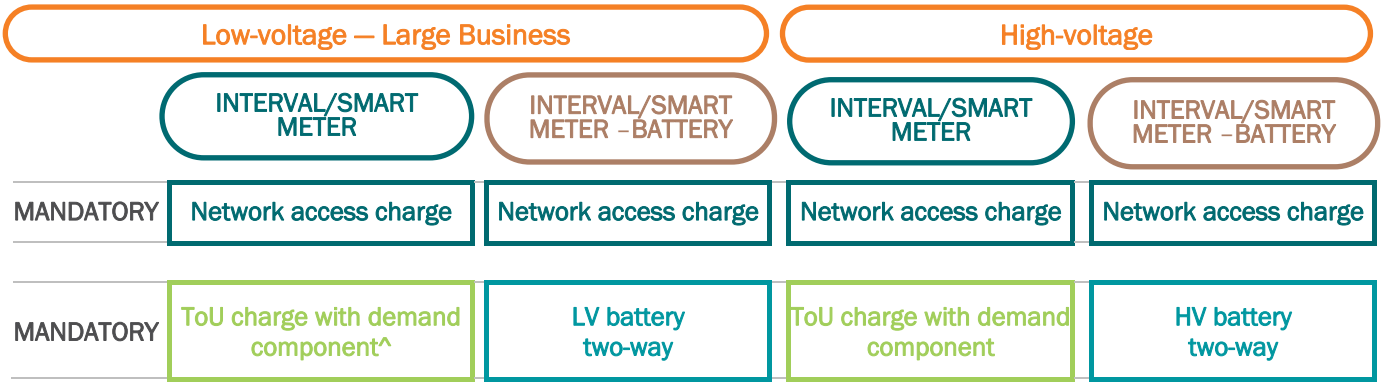
Our approach to assigning small customer default tariffs



* No opt-in tariffs are provided for small customers with basic accumulation meters. These customers can still request a reassignment, but their retailer will need to install a smart meter to enable this. They will then have access to the assignments for interval/smart meters. Customers are permitted one opt-in reassignment every 12 months per retailer.

From 1 July 2028, or the pricing year immediately following Essential Energy establishing its new billing process capabilities, interval/smart meter customers on the ToU tariff will be reassigned to the Sun soaker two-way consistent with our export tariff transition strategy.

^ From 1 July 2028, or the pricing year immediately following Essential Energy establishing its new billing process capabilities, the same export tariff and rebate that applies to the Sun Soaker two-way tariff will be added to the demand-based tariff.



^ From 1 July 2028, or the pricing year immediately following Essential Energy establishing its new billing process capabilities, the same form of export tariff that applies to the residential and small business Sun Soaker two-way tariff will be added to the large business demand-based tariffs along with an equivalent export rebate.

Our transition to two-way pricing

Our proposed tariffs include pricing based on the electricity you consume, and the introduction of export prices for electricity you export. We will implement these two-way prices in line with our export tariff transition strategy as specified in the NER. Our export tariff transition strategy will improve the way we recover the costs of operating our network, while also empowering you to save money by choosing when to use or export the energy you generate.

We prepared our export tariff transition strategy in accordance with the NER's requirements and the AER's export tariff guidelines. This strategy provides transparency about our long-term plan to phase-in export pricing and gives any of you who are considering investing in energy resources, including rooftop solar, clarity about your right to access export services.

Our transition strategy has been informed by factors including:

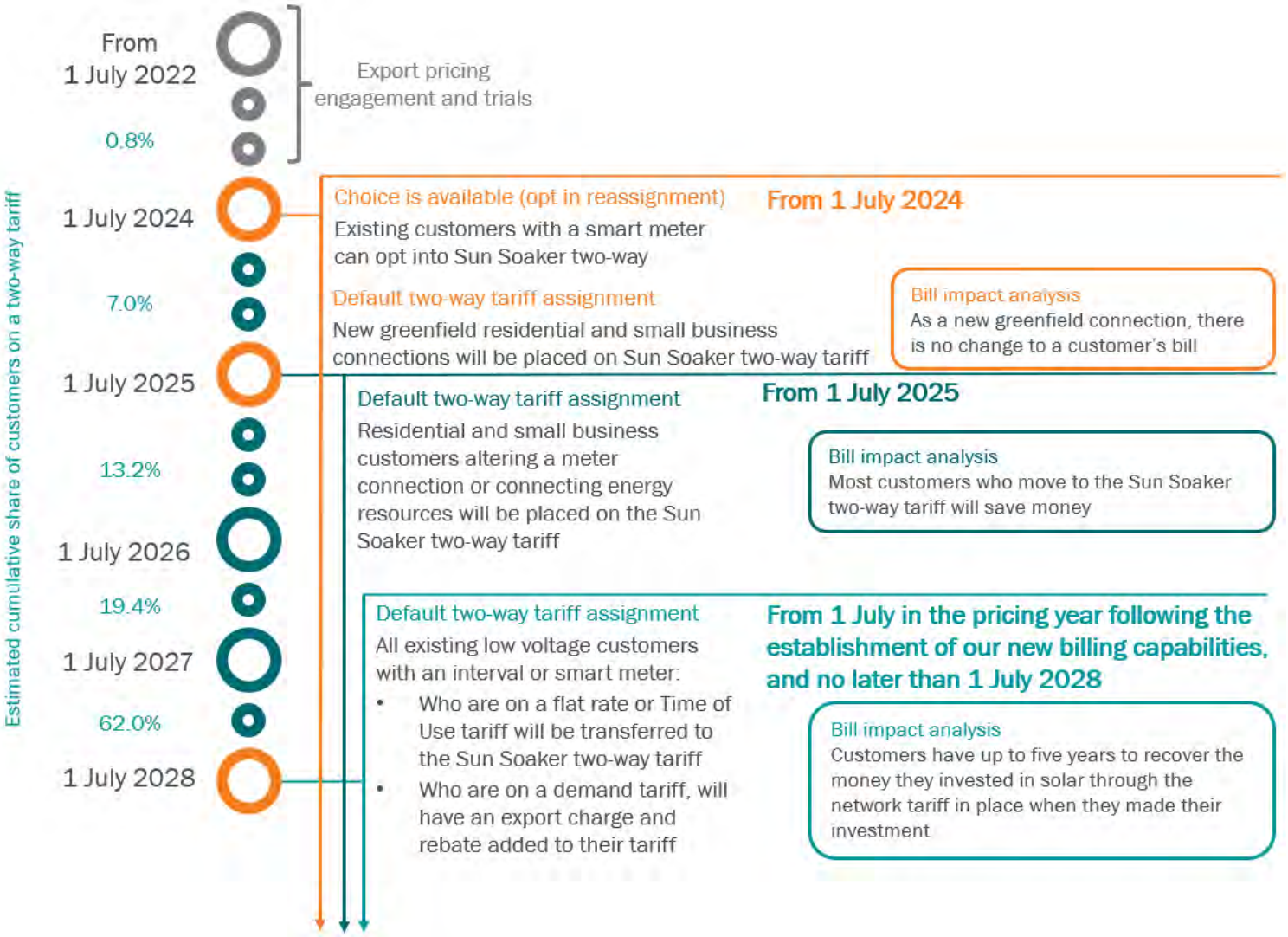
- the NER requirements and the AER's guidelines
- our network characteristics
- our customers' CER and demand characteristics (see **Chapter 11 - Energy and demand forecasts**)
- our Future Networks Strategy (see **Chapter 7 - A network fit for the future**)
- feedback gathered while engaging with you, and with other industry stakeholders, on two-way pricing
- the results of testing trial tariffs.

Timeframes for moving onto export tariffs

We will transition to two-way pricing in stages. This approach enables us to immediately adopt cost-reflective export charges based on our long run marginal cost estimates for peak exports. At the same time, we will gradually transition you to export tariffs by:

- adopting default tariff assignments that were informed by bill impact analysis and our customer engagement
- providing opt-in reassignments for you or your retailer to enable you to choose to move onto two-way pricing earlier than our default assignments
- empowering you to save money by choosing when to use and export energy – by pairing our export charges with an evening peak export rebate incentive payment and Sun Soaker discounted midday consumption charges.

Proposed timeline for transitioning low voltage connected customers to two-way tariffs



Effect of two-way pricing on your bills

For residential and small business customers

We extensively tested the effect of two-way pricing on bills, including with our PCC and through deep dives with some of you. This testing informed our transition strategy, leading to our staged approach to assigning export tariffs as well as the design of our tariff structure and tariff levels. Below is the estimated effect on bills for different customers who move onto a Sun Soaker two-way tariff from an existing anytime tariff or our current time of use (ToU) interval tariff.

The estimated effect on residential and small business bills in the first year of moving from one tariff to another ($ real June 2024)

		Residential			Small business		
Annual consumption		2 MWh	2 MWh	5 MWh	5 MWh	5 MWh	20 MWh
Size of solar system (max. export)		0 kW	2.9 kW	6.5 kW	0 kW	7.9 kW	10 kW
		No solar	Average solar	High solar	No solar	Average solar	High solar
From Anytime (accumulation meter customers)	$ annual	-66	-48	-164	-60	-30	-1,051
	% on retail	-4.6%	-3.4%	-6.4%	-2.2%	-1.1%	-12.8%
From ToU (interval/smart meter customers)	$ annual	-6	11	29	-23	50	15
	% on retail	-0.5%	0.9%	1.4%	-0.9%	2.0%	0.3%

For large businesses connected to the low voltage network

Stakeholders questioned why large business customers did not also have an export tariff in our Draft TSS. We engaged our PCC further on the need for, and potential options for, including our export tariff and rebate for large business customers connected to the low voltage network.

Our analysis and this further engagement resulted in us introducing two-way prices for these customers from 1 July 2028 or earlier should our billing capabilities allow. We propose the following:

- The same export and rebate structure (including basic export limit) as all our two-way tariffs
- The same export tariffs as all our two-way tariffs, reflecting our long-run marginal cost of peak exports
- A rebate symmetrically aligned to the equivalent large business low voltage peak tariff.

To avoid adverse bill impacts for these customers, we will adopt a revenue neutral approach to introduction of the above charges in the first year when they are introduced.

Indicative changes to our network charges

The actual prices you will pay in the next regulatory period will depend on:

- the AER's final distribution determination for Essential Energy for the 2024–29 regulatory period, including, but not limited to, updated forecasts in relation to customer numbers, smart meter forecasts, energy consumption and energy exports
- the transmission costs, the Climate Change Fund levy and any NSW Roadmap or Green Hydrogen Exemption Scheme costs passed on to Essential Energy
- the cost of debt rates, which are updated annually, as discussed in **Chapter 5 – Our revenue requirement** and in **Attachment 5.03 – Allowed rate of return**
- the application of incentive schemes as discussed in **Chapter 8 – Framework and approach**.

While we cannot predict the exact impact of these factors on our charges, the NER requires us to provide a pricing schedule as part of our TSS that sets out the indicative charges we will apply for each year of the regulatory period.

We expect real average annual increases in the cost of using the distribution network (the network charge) in your electricity bills of 2.97 per cent for the 2024–29 regulatory period using recent placeholder interest rates. An average customer retail bill will therefore increase by 1.13 per cent per annum in real terms, assuming no other changes.

Forecast changes to average charges

We calculate the average changes to network charges by dividing our proposed annual revenue requirements by the total forecast energy consumption for each regulatory year.

Forecast changes in average network charges (per cent change in real charges)

	2024–25	2025–26	2026–27	2027–28	2028–29
Average change in network charges (real)	2.40	1.90	1.71	2.57	2.41

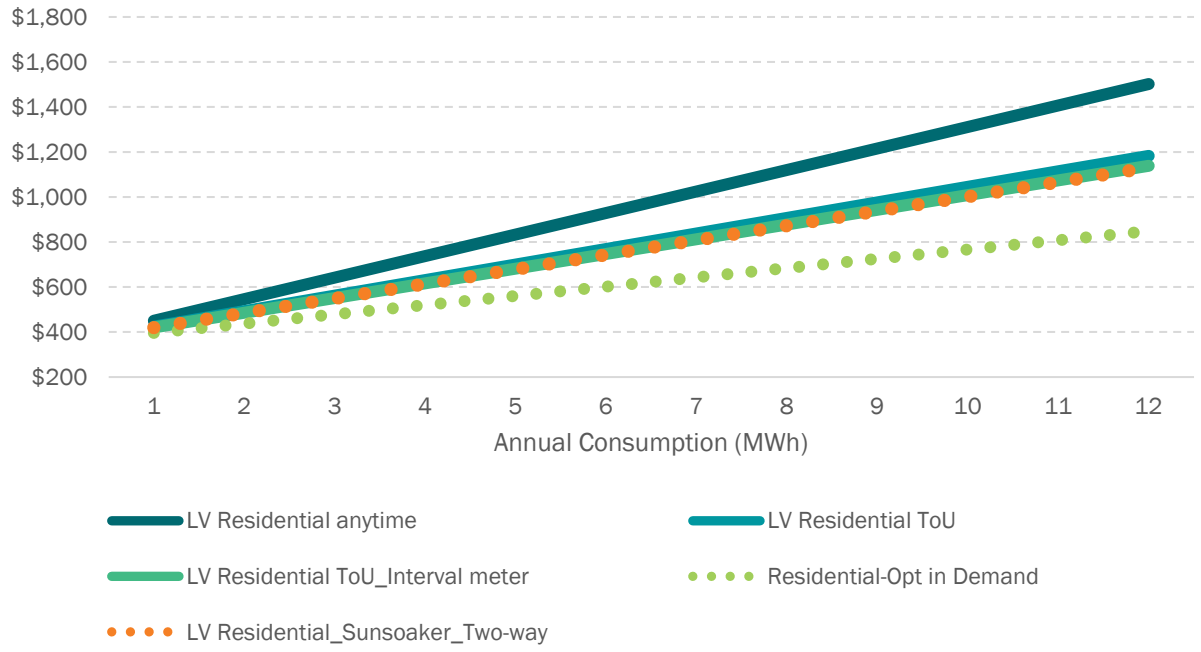
Impact on your bills

Our proposed network pricing for the 2024–29 regulatory period is different to that in our current TSS and will result in changes to your network charges. Movements in average annual bills for our residential and small business tariffs are shown below. Average price changes will vary for each customer, depending on how much electricity is used or exported.

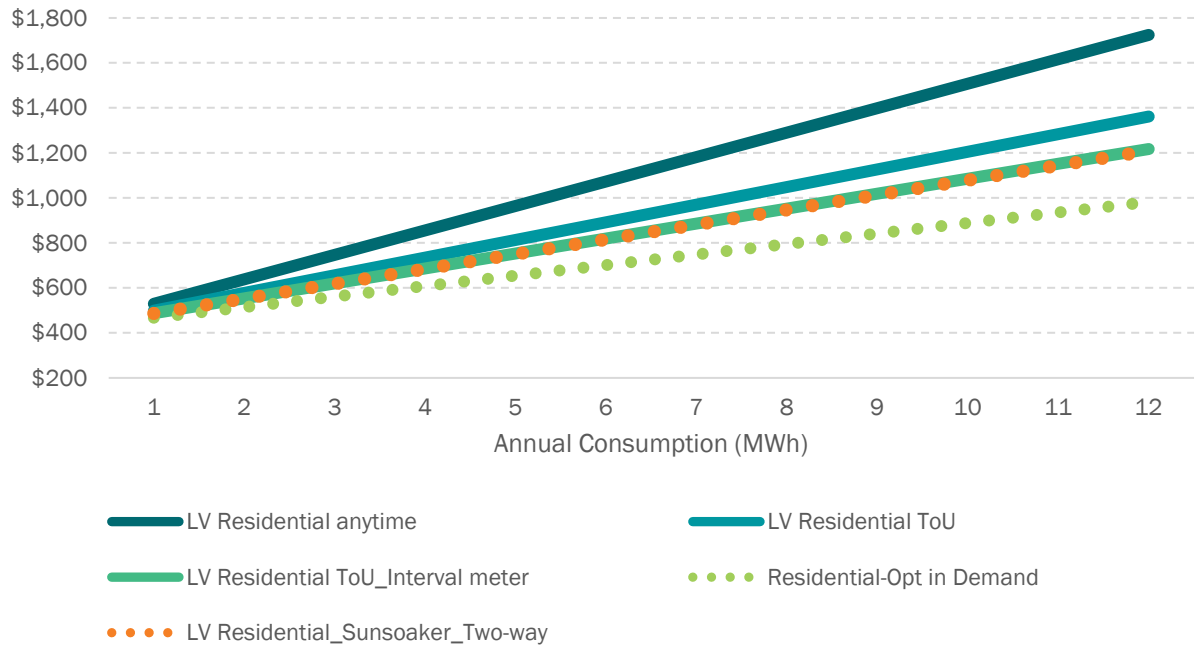
Our bill impact analysis indicates that residential and small business customers will have lower network charges under our Sun Soaker two-way tariff compared to our existing anytime (flat rate tariff) and Time of Use tariffs and this is a primary reason as to why we are not proposing to apply a grace period before moving customers to this new tariff.

Comparison of 2024–29 residential distribution network charges by tariff

Residential customers without solar 2024-25 (real $ 2023–24)

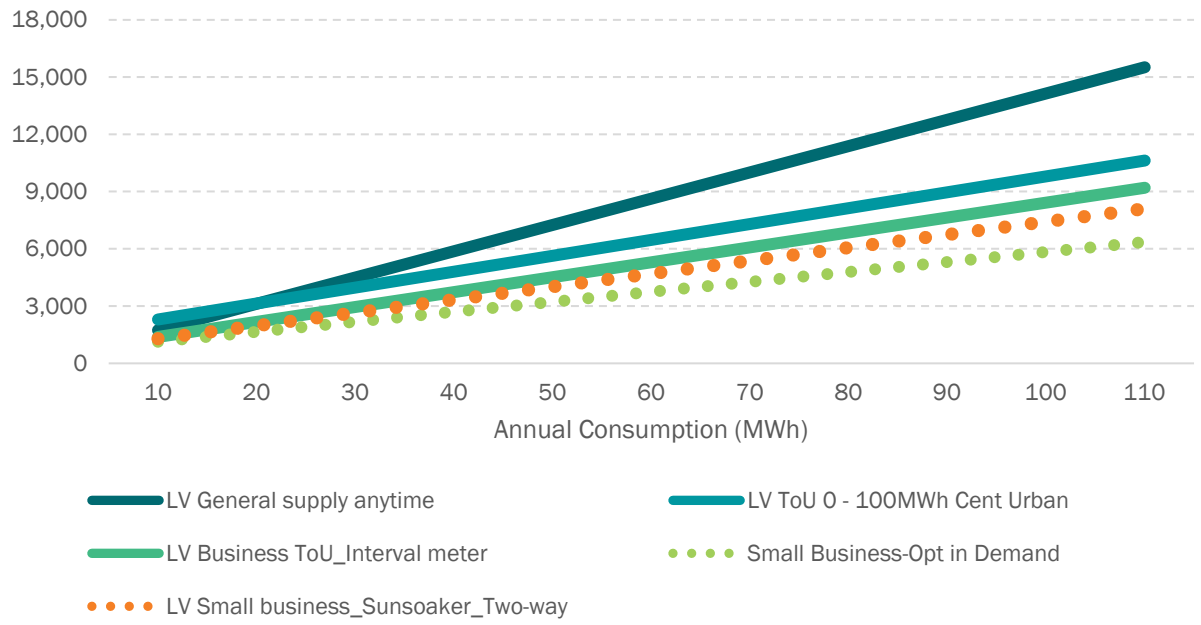


Residential customers without solar 2028-29 (real $ 2023–24)

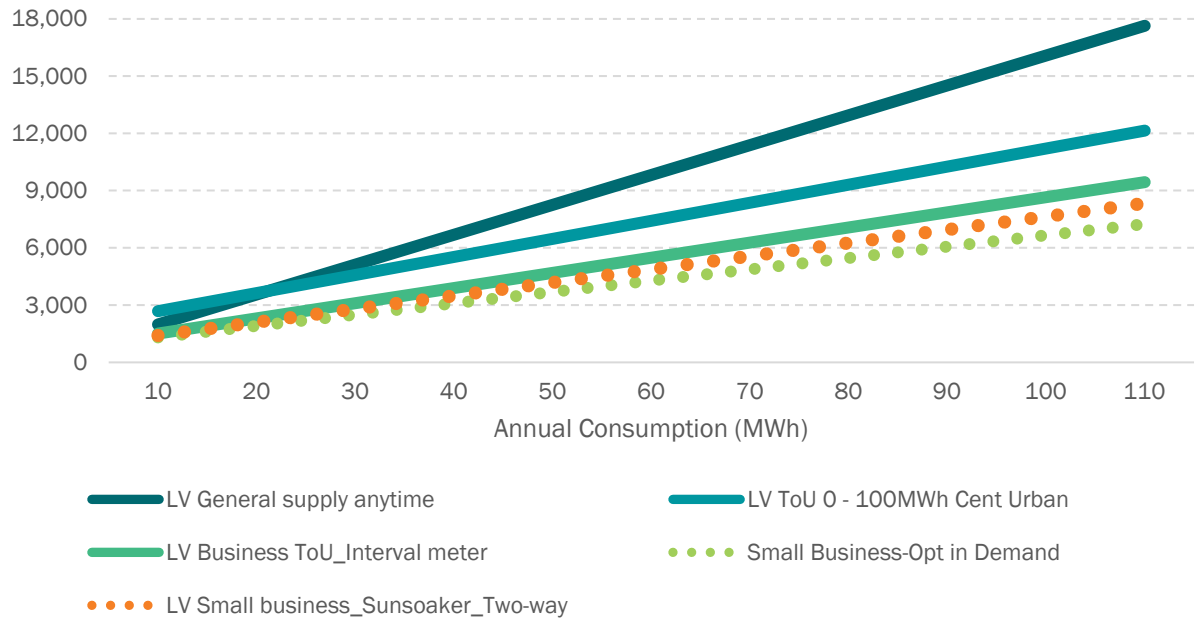


Comparison of 2024–29 small business distribution network charges by tariff

Small business customers without solar 2024-25 (real $ 2023–24)



Small business customers without solar 2028-29 (real $ 2023–24)



Related attachments

This chapter is supported by our TSS in **Attachment 12.01**, which explains how we have complied with NER requirements, and our tariff structure explanatory statement in **Attachment 12.02**, which explains how we have developed our TSS. **Attachment 12.03** contains our proposed Network Use of System (NUoS) pricing schedule.

13

Alternative control services

Chapter Summary

- We will provide customer requested and customer specific services whilst minimising costs
- To provide our public lighting customers with greater pricing transparency, we propose to introduce some standardised fee-based pricing and a more equitable capital recovery for installed assets

What are alternative control services?

Sometimes our customers need services additional to basic energy supply. In these circumstances, the customer pays us the full cost of providing that service. Examples of these types of services include some metering services, public lighting (used for street lighting and at sports fields and other council facilities) and ancillary network services (such as customer connections).

Basic meters | Public lighting | Ancillary network services

Ancillary network services

Ancillary network services are diverse, non-routine services we provide to customers on an as-needs basis, ranging from design related services for contestable work, to network safety services. The prices are either fee-based or quoted and primarily based on labour rates depending on the service.

As an alternative control service, the cost of each ancillary network service must be recovered from the individual customer requiring it. These costs have been forecast based on an hourly rate for the type of employees who perform the service and an estimate of the time it takes to carry out that service, including travel time, and the cost of fleet or other resources. We use these costs to calculate the total direct cost for each ancillary network service. We then apply overheads and a return equivalent to the rate of return detailed in **Chapter 5 – Our revenue requirement.**

Our proposed ancillary network services prices have been developed in accordance with the AER's price cap formula and are provided in **Attachment 12.06.** An explanatory document is available in **Attachment 13.01**.

Metering services

1,062,000 Type 5 and 6 meters

Basic meters (older style accumulation meters that require someone to physically read them) are being phased out. They are being replaced with smart meters (that automatically measure energy use digitally). Essential Energy continues to be responsible for operating and maintaining the basic meters until they are replaced.[11]

We forecast that around 55 per cent of our remaining basic meters will be replaced by smart meters during the 2024–29 regulatory period. Our role in meter service provision will therefore decline over time as our basic meters are replaced by smart meters serviced by competitive metering service providers (see **Chapter 11 – Energy and demand forecasts**).

As mentioned earlier, the AEMC's recently published Draft Report into metering services recommends a much faster pace of smart meter uptake than we have forecast and included in this Proposal and TSS. Additional expenditure (possibly material) may be required to facilitate this and associated work such as site remediation. We will monitor the progress of this review and include any relevant changes in our Revised Proposal to the AER in late 2023.

Essential Energy's responsibilities for our remaining basic meters

Inspect
Inspection and testing of meters to ensure they are accurately recording consumption

Maintain
Covers work to maintain basic meters until they fail (then the retailer installs a smart meter)

Meter reading
Quarterly or other regular reading of metering installations

Our proposed metering prices have been developed in accordance with the AER's price cap formula and are provided in **Attachment 12.05**. An explanatory document is available in **Attachment 13.02**.

[11] Type 7 meters (unmetered supply points, like streetlights) remain a monopoly service and the AER has proposed to continue regulating these meter services as standard control services in the 2024–29 regulatory period.

Public lighting services

We provide public lighting services to local councils. These services include the operation, maintenance and replacement of public lighting assets, which are vital to local communities.

240,000 public lighting assets

85 Local Government Areas

Engagement with councils

In addition to our business-as-usual engagement with local councils and Joint Organisations (JOs), we held a series of online forums and meetings specifically to prepare this Proposal. A summary of our public lighting Proposal engagement program is shown on the following page. We have completed four phases of engagement to date and have planned a fifth phase to facilitate further review and discussion on a number of matters.

In phase one and two we asked councils to consider which public lighting principles should be adopted for our 2024–29 Proposal. Councils used our suggestions and provided further feedback – resulting in the development of the principles shown below.

Principles for public lighting in 2024–29

Principle	This means	Outcome
 Collaboration and co-design	Working together to build a framework that serves the needs of both councils and Essential Energy. Enabling informed decision making and empowering communities.	> 2024–29 Public Lighting proposal co-designed with councils
 Effective delivery of public lighting services	Operate a public lighting scheme safely, efficiently and effectively over its economic life, in accordance with the service level requirements in the NSW Public Lighting Code and the in-service values specified for lighting in the AS/NZS1158 series of standards pertaining to the lighting of roads and public spaces. Commitment to faster turnaround times, open lines of communication and responsiveness to requests.	> Glare shield installation timeframes reduced > Compliance reporting improved
 Embrace new technologies and enable smart communities	Essential Energy working closely with councils to utilise a uniformed and streamlined approach to embedding new technology and lighting equipment options.	> Continue LED roll-outs which reduce carbon emissions > Planning a smart street lighting pilot with Bathurst Regional Council
 Fair and transparent recovery of costs	Councils' streetlight use of system (SLUoS) charges are fair and cost reflective of Essential Energy's Public Lighting operating costs. Bills and charges are transparent and easy to understand.	> Weighted SLUoS capex recovery methodology being proposed > Standardised fees for Minor Capital Works

We also asked Councils what their key issues were in relation to public lighting – these are shown in the diagram below.

Smart Technology

Black Spot Identification and streetlight failure detection

LED upgrades and Glare shields

Communication and Information

Joint use of poles and the Streetlighting design process

Our public lighting engagement program for the Proposal

Phase 1 Understanding our customers

March - April 2022

- Online survey
- 1 Zoom forum

- We engaged independent experts Woolcott Research and Engagement to facilitate our engagement with Local Councils
- 42 Local Councils responded to the online survey covering satisfaction with streetlight services, reasonable timescales for restoration and installation, pricing and billing data and streetlighting options
- We held a Zoom forum with 43 local council participants to present a summary of the survey findings, identify key priorities, obtain input into the key principles for the public lighting proposal and set expectations for future engagement

Outcome:

- Draft principles for the Public Lighting Regulatory Proposal
- Identified Councils' key priorities
- Improve education and communication

Phase 2 Setting the Scene

May 2022

- 1 Zoom forum

- We held a Zoom forum with 18 local council participants and presented an overview of the findings from Phase 1 and retested and refined the principles
- Shared developments to increase knowledge and awareness in relation to effective delivery of public lighting services, embracing new technologies and enabling smart communities and fair and transparent recovery of costs

Outcome:

- Agreement of principles although costs are a key concern
- Reduction in glare shield installation times
- Cost is the upmost consideration with new technologies

Phase 3 Deep dive into services

June - July 2022

- 2 Zoom forums

- We held two Zoom forums with local council participants to discuss standardising minor capital works fees, effective delivery of public lighting services, new technology and smart street lighting pilot and proposal timeline and future collaboration
- We also discussed details of opex and capex charges and introduced indicative pricing for 2029-24 including the proposed weighted capex rate using a blended model

Outcome:

- Small working group formed to take a deeper dive into minor capital works rates and charges
- Mixed views on the componentised approach to pricing and billing
- Further education and engagement is required

Phase 4 Deep dive into costs and prices

September - November 2022

- 9 Zoom meetings

- We held nine Zoom meetings with local council participants to revisit timelines and agreed principles and review current versus next period performance
- We shared opex and capex modelling outcomes and key assumptions for opex and capex and LED benefits
- We facilitated deep dive sessions into opex and capex items including overheads. modelling updates and latest pricing were presented based on feedback

Outcome:

- Participants were asked for feedback throughout each of the sessions, with a view to further collaboration
- Future deep dive meetings required to resolve issues identified throughout phase 4 engagement

Phase 5 Finalising 2024–29

2023

- Commitment to continued engagement

- We acknowledge that there are several items in the Public Lighting pricing model that require further review, explanation and decision making over the coming months and as part of the revision process in 2023

For discussion:

- Seven items identified for further collaboration and review
- Collaboration and review of AER Draft Decision

Detailed reporting on our engagement activities

We have summarised our engagement with local councils in the in **Attachment 4.02 – How engagement informed our proposal report.** The findings from each phase were shared with customers in each relaunch of our Virtual Room. Detailed engagement reports were also published on our Engagement Hub at the conclusion of each phase.

Woolcott Research and Engagement also provided independent reports on our engagements for public lighting, and these reports are attached to this Proposal:

- **Attachment 4.10 – Public lighting Survey Engagement Report**
- **Attachment 4.11 – Public lighting Phase 1 Engagement Report**
- **Attachment 4.12 – Public lighting Phase 2 Engagement Report**
- **Attachment 4.13 – Public lighting Phase 3 Engagement Report**
- **Attachment 4.14 – Public lighting Phase 4 Engagement Report**

LED technologies

We will continue to explore new public lighting technology solutions with our councils to facilitate the transition to new technologies. As such, the rapid take-up of LED technology for public lighting is forecast to continue into the 2024–29 period.

We will facilitate adoption of technologies such as smart street lighting by conducting pilots with interested councils. Essential Energy is already working with Bathurst Regional Council in this space.

LEDs helps Council reduce costs

The LED streetlight upgrade investment by Blayney Shire Council, implemented by Essential Energy in September 2021, has reduced energy usage from about 25,000 kWh in January of 2021 to 10,600 kWh in January of 2022 and saved nearly $5,500. Blayney Mayor Scott Ferguson says the results are impressive.

Blayney Chronicle, 7 April 2022

Transparent pricing

Greater transparency was identified as a key principle by councils. To address this, we will introduce fee-based pricing for minor capital works for the 2024–29 regulatory period – a move strongly backed by our council customers.

For the 2024–29 regulatory period, the component-based model will provide cost-reflective pricing in an uncomplicated and transparent manner. Charges will be separated into maintenance and capital recovery charges for each lighting component, including light, bracket and pole.

Our public lighting prices recover the three main costs to us of providing these services – capital and operating costs and safety initiatives.

Our proposed public lighting prices have been developed in accordance with the AER's price cap formula and are provided in **Attachment 12.04**.

An explanatory document is available in **Attachment 13.03**.

Our three main costs for providing public lighting

New services identified within a regulatory period

From time to time, a new service is identified during a regulatory period that does not have a price set by the AER. We intend to develop pricing in a manner that is consistent with other services in the same classification group.

This gives us the flexibility to provide new, unforeseen services to you and provides you, our customers, with the protection of a regulated pricing mechanism.

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Glossary

TERM	MEANING
2019–24 regulatory period	The regulatory control period beginning 1 July 2019 and ending 30 June 2024
2024–29 regulatory period	The regulatory control period beginning 1 July 2024 and ending 30 June 2029
ACS	Alternative control services – specific user-requested services: public lighting; Type 5 and Type 6 metering (generally residential and small business customer meters); and ancillary network services
aggregators	A business that groups and coordinates the exports of individual electricity customers to form a single entity that can then engage in the electricity market
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator – the economic regulator for our distribution business
ASP	Accredited service provider
augex	Augmentation capital expenditure
basic meter	Older style meters that can only measure the total amount of consumption between manual meter reads (type 6)
capex	Capital expenditure – funds used to buy or upgrade physical assets such as power poles and buildings
CER	Consumer energy resources – decentralised small-scale local energy generation, located 'behind the meter' of a customer
CESS	Capital Expenditure Sharing Scheme
charging parameters	The specific charging characteristics of a component within the pricing structure
composite pole	A power pole constructed from glass fibre, fire-retardant resin with a UV and fire-retardant coating. Compared to traditional timber poles, they are fire resistant, last longer and offer better protection against termites and corrosion
controlled load	A tariff used with certain appliances that can have the supply of electricity limited in peak times – separately metered
CPI	Consumer Price Index – a measure of inflation
CSIS	Customer Service Incentive Scheme
customer class	A group of customers who have common characteristics that allow them to be grouped together to ensure similar customers pay similar charges
demand charge	The charge based on the maximum amount of electricity a customer uses at any one time, measured in kW
DER	Distributed energy resources – decentralised local energy generation, a broad term that encompasses: > generation often located 'behind the meter' of a customer – which we are now referring to as consumer energy resources (CER) > large scale generation such as solar farms and grid-scale batteries > our non-network solutions such a regulated SAPS and microgrids
direct control services	Services regulated by the Australian Energy Regulator under the National Electricity Rules, comprising Standard Control Services and Alternative Control Services
DMIA	Demand Management Innovation Allowance
DMIS	Demand Management Incentive Scheme
DNSP	Distribution Network Service Provider
DOE	Dynamic operating envelope – variable limits that can be set on a customer's CER installation for their consumption and export of electricity, and which can be varied according to network capacity at the time
DUoS	Distribution Use of System – a charge for using the distribution network
EBSS	Efficiency Benefit Sharing Scheme
EV	Electric vehicle

TERM	MEANING
export services	A new category of distribution services to facilitate customer electricity exports
F&A	Framework and Approach (paper)
flexible connection agreement	An upcoming change compared to our standard connection agreement – it will reflect how exporting capacity can be shared by customers exporting excess generation.
GSL	Guaranteed Service Level – outage threshold levels specified in our Licence Conditions. Customers may be eligible for a GSL payment if the number of, or the duration of, outages they experience is higher than the GSL level specified
HV	High voltage
IAP2	International Association of Public Participation – formal framework to advance and extend engagement with the public
ICT	Information and communications technology
interval meter	a meter that can record consumption in half hourly intervals but needs to be read manually (type 5)
IPART	Independent Pricing and Regulatory Tribunal of NSW
kVA	Kilovolt ampere
kW	Kilowatt
kWh	Kilowatt hour
LED	'Light-emitting diodes' – semiconductor devices which produce light when an electrical current is passed through them
Licence Conditions	A legislated document that sets out the required conditions that Essential Energy must operate the network under. IPART monitor compliance against the conditions.
load	The demand for electricity on the network
LRMC	Long run marginal cost – the cost of adding one more unit of demand to the network
LV	Low voltage
microgrid	A local energy grid that is connected to the traditional grid but can operate independently, with customers exchanging energy locally
MWh	Megawatt hour – unit of energy equivalent to 1,000 kilowatt hours
NEM	National Electricity Market
NER	The National Electricity Rules that govern the operation of the National Electricity Market
nominal	Dollars after factoring in inflation
NUoS	Network Use of System – the charge for using our distribution network, as well as transmission-related pass through costs and jurisdictional scheme costs such as the Climate Change Fund
opex	Operating expenditure – funds to inspect, maintain and operate our network
outage	A planned or unplanned loss of electricity service – also known as a supply interruption
PCC	Pricing Collaboration Collective – a group of engaged and diverse stakeholders who represent the interests of our customers with whom we engaged with on pricing related matters
peak demand/peak load	The maximum electricity demand customers place on the electricity network
Peak exports/minimum load	When exports are greatest but not enough of that energy is being used
price cap	The maximum price we can charge customers, as set by the Australian Energy Regulator
pricing components	The combination of elements – including network access, and consumption and demand charges – that reflect the efficient costs of providing network services to customers
pricing schedule	An annually published list of prices and pricing structures for each network charge – also referred to as the 'Network Price List and Explanatory Notes'
pricing structure	The combination of pricing components that make up the network charge

TERM	MEANING
Proposal	Our Regulatory Proposal for the 2024–29 regulatory control period, submitted under clause 6.8 of the National Electricity Rules
PV	Photovoltaic – solar energy
RAB	Regulatory asset base – the regulatory value of the assets we use to provide distribution services
real	Dollars before factoring in inflation, for example 'real $2023-24' means dollars in equivalent terms before inflation is added – when added it is 'nominal'
regulatory allowance	The Australian Energy Regulator's decision on cost components of our Regulatory Proposal
repex	Replacement capital expenditure
return on capital	Return on investment generated for the funds (capital) invested; used to fund repayment of debt and measure profitability
revenue cap	The maximum revenue the Australian Energy Regulator allows us to collect in each year of the regulatory period
Revised Proposal	Our Revised Regulatory Proposal for the 2024-29 regulatory control period, submitted under clause 6.8 of the National Electricity Rules
REZ	Renewable Energy Zone
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SAPS	Stand-alone power system – a local energy system that is not physically connected to the traditional grid but is powered from one or more alternative sources, such as a solar photovoltaic system, wind turbines or engine generators. It is usually made up of a combination of solar panels with a battery and a diesel generator as back-up.
SCC	Stakeholder Collaboration Collective – a group of engaged and diverse stakeholders who represent the interests of our customers, our primary reference group for the Proposal
SCS	Standard control services – our core activities for enabling customers to access our network and for supplying them with electricity
SLUoS	Street Lighting Use of System – charges for capital recovery (for public lighting installations initially funded by Essential Energy) and maintenance (operating expenditure) of all public lighting installations
smart meter	A digital device that measures and records a customer's electricity usage and their maximum demand every half-hour and transmits the data to their electricity provider (type 1–4)
smoothed revenue	A method that smooths out fluctuations in forecast expected revenue
solar farm	A large-scale solar photovoltaic project, which may be connected to the grid
STPIS	Service Target Performance Incentive Scheme – the Australian Energy Regulator's financial incentive scheme for rewarding or penalising transmission and distribution network service providers for reliability and customer service outcomes
Sun Soaker	A modern take on the traditional Time of Use Tariff, it aims to encourage customers to use more power during peak solar PV export times (between 10am & 3pm) and less at other times (7-9am and 5-8pm). It can help manage both evening peak demand issues on the network and power quality issues from increasing levels of solar PV exports.
tariff class	A group of customers who have similar characteristics and who pay similar prices
ToU	Time of Use – a meter or charging parameter that varies according to whether electricity is consumed in a peak, shoulder or off-peak period
TSS	Tariff Structure Statement
TUoS	Transmission Use of System – charges for using the transmission network that are a component of NUoS charges (see NUoS)
two-way pricing	Two-way prices charge for both consumption and exports

Appendix A – Summary of engagement outcomes

Appendix summary

– Summary of what we heard from customers and stakeholders, and where our Proposal reflects this

Summary of engagement outcomes

As outlined in **Chapter 4**, our engagement program was extensive, with each Phase building on the learnings and outcomes of the previous Phase. The tables on the following pages summarise the results of our customer and stakeholder engagement across our four engagement themes.

The views of customers and stakeholders were aligned across most of the topics, however, where there were divergent views, this is mentioned in the tables, along with a summary of how we have balanced those views to land on our proposed approach.

The results of our customer and stakeholder engagement across our engagement themes

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
Resilience and reliability *How risk appetite shapes our investment decisions*			
Risks we consider in assessing and prioritising projects You agreed that the main risks we should consider slotted into five categories: safety, reliability, bushfire risk, ecology and heritage, and customer experience. Your average weighting for these risks were: reliability 26%, safety 25%, bushfire risk 20%, ecology and heritage 17%, and customer experience 12%. This is in line with how we rate risk and what we value. However, some of you identified that climate change was missing from our risk approach. We have overlaid a climate change 'lens' to assess the risk it poses to proposed projects based on our detailed climate change modelling that was completed in September. > This has required a minor adjustment to the number of proactive composite pole replacements that we will undertake over 2024–29. We had proposed 15,000 proactive replacements in Phase 4 of our engagement, but our climate change modelling indicates that we have around 11,000 positive net present value sites. > We have also reduced the number of microgrids down from the seven indicated in our Phase 4 engagement to six, as one of the seven microgrid sites will be built in the current regulatory period. 'I feel that there needs to be a macro-level climate change impact included.' *Council participant, Phase 1*	n/a	Safety, Affordability, Reliability & Resilience, Good customer service and communication, Future focused	6 Risk appetite, resilience and reliability 9 Operating expenditure 10 Capital expenditure
Reliability > You support maintaining the current level of reliability. > There is also support for us to continue to improve reliability for our worst-served customers. We've incorporated both these priorities into this Proposal.	87% *Phase 2 report* 91% *Phase 2 report*	Affordability, Reliability & Resilience	
Community resilience versus strengthening the network Most of you agree that focusing on strengthening the network is slightly more important than a combined approach of network strengthening and working with communities to help them build up their resilience. This Proposal incorporates investments to do both. 'If you strengthen the network first, you don't need to support the communities as much.' *Broken Hill participant, Phase 2*	51% network strengthening 40% do both *Phase 2 report*	Safety, Affordability, Reliability & Resilience, Good customer service and communication, Future focused	

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
Resilience and reliability *How risk appetite shapes our investment decisions* continued			
Community resilience You support investments in generators, portable SAPS, portable solar streetlights, a portable community hub, a portable depot and three new staff to work with councils, communities and critical infrastructure asset providers to help them develop resilience plans.	90% *Phase 3 report*	Safety, Affordability, Reliability & Resilience, Good customer service and communication, Future focused	6 Risk appetite, resilience and reliability 9 Operating expenditure 10 Capital expenditure
Network strengthening You support strengthening network resilience through: > broad and proactive investments in composite poles > the conversion of 40 km of poor-condition overhead powerlines to underground powerlines in very high-risk areas > a high level of investment in SAPS and microgrids > investments in batteries and solar panels at our key telecommunications and zone substation sites to provide a source of backup power. As mentioned previously, we have had to reduce the number of proactive investments in composite poles to consider the results of our recently completed climate change modelling. This lower level of investment has been reflected in our Proposal. We have also reduced the number of microgrids down from the seven indicated in our Phase 4 engagement to six, as one of the seven microgrid sites will be built in the current regulatory period.	*Phase 3 report* 67% 66% 91% 87%	Safety, Affordability, Reliability & Resilience, Future focused	
Disconnecting parts of the network on high-risk days We did not receive clear support to disconnect high-risk areas of the network on total fire ban days to limit the risk of our network starting a fire. As such, we are not proposing to implement such a process.	42% supportive 31% against	Safety, Reliability & Resilience	

'I can do without a lot of these but not without the community hub.'

Ballina participant, Phase 3

'Having the backup generators for critical infrastructure is a no brainer.'

Dubbo participant, Phase 2

'The portable solar lights would be great to light up roads. The drive through was deadly after the flooding when all the lights went out.'

Ballina participant, Phase 3

'We are not experts on electricity so Essential Energy should be doing the education on electrical matters.'

Council participant, Phase 2

'If they're not going to burn down and they're easier to install, it's just a logical position.'

Aboriginal and/or Torres Strait Islander participant, Phase 3

'Having SAPs and microgrids helps community recover more quickly. This is the future for lots of smaller towns ... The faster we can roll them out the better.'

Advocate participant, Phase 3

'I mean if it's going to save homes and lives sure – but holey moley!'

Broken Hill participant, Phase 2

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
 **Network of the future** *Delivering the services customers want today and into the future*			
Making the network smarter and ready for the future There is strong support for us to invest in real-time monitoring of the network. This would involve investing in a fully integrated data management system and investing in network sensors and meter data across the broader network. 'Proactively monitoring is great, a good benefit for everyone. If we can pay a bit extra, it would be well worth the investment.' *Dubbo participant, Phase 3*	77% *Phase 3 report*	'Fix the problem before it happens. Be proactive.' *Ballina participant, Phase 3*	7 A network fit for the future 9 Operating expenditure 10 Capital expenditure
There is support for us to invest in 100 dynamic assets to mitigate existing power quality issues and pre-empt future issues. In Phase 4 of our engagement, we indicated that the costs of this investment had increased above our initial expectations. This increase was considered acceptable given the significant role this investment plays in delivering customers' future vision. 'Investing in assets to actively manage the network is good because its preventative.' *Bega participant, Phase 2* 'There will be a payoff to having a better, smarter system.' *Bega participant, Phase 4*	87% *Phase 3 report*		
In relation to sustainability and lowering our environmental impact there is: > support for us to enhance our sustainability and go above and beyond regulatory requirements > strong support for us to invest in our own EVs and solar panels for our depots. This Proposal incorporates investments to do both. 'It shouldn't be an option – they should be doing this anyway.' *Wagga Wagga participant, Phase 3* 'Essential Energy has a corporate responsibility to walk the talk.' *Advocate participant, Phase 3*	66% *Phase 2 survey* 93% *Phase 3 report*	 Future focused 'Lowering bill costs and lower environmental impact is key.' *Advocate participant, Phase 3*	
Funding connections to the network You agree that we should continue to fund a suitable portion of network upgrades related to new connections, where they will increase revenue or improve the utilisation of our network. This will therefore deliver existing customers a reduction in our charges given they will be shared across new loads and a greater number of users.	71% *Phase 2 survey*	 Affordability Collective benefit	
Introducing flexible connection agreements You support the introduction of flexible connection agreements for new and upgraded solar connections. Flexible connection agreements will be introduced by the business within the next year and will work with our smarter network investments to allow customers to export more energy than they otherwise could and share the export capacity of the network fairly between customers. 'It has got to be the flexible it can't be the fixed one – that is not fair for anyone. So, it is how you implement it.' *New technology provider, Phase 4*	77% *Phase 4 report*	 Affordability Collective benefit Future focused 'If I was buying new panels, I would rather the flexible approach.' *Broken Hill participant, Phase 4*	

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
Pricing *Fairness and affordability*			
Consumption prices There is a clear preference for: > the continuation of postage stamp pricing (the same price regardless of location) > prices that do not change with the seasons. 'Postage stamp pricing is the most controversial thing you can do, but I love it.' *Aggregator, Phase 2* 'No to seasonal pricing. When I heard that it sounded like when you get hot, we're going to charge you more and when you get cold, we're going to charge you more.' *Broken Hill participant, Phase 2* Our Proposal and TSS retain postage stamp consumption prices with no seasonal overlay.	75% *Phase 2 and Deep dive reports* 62% *Phase 2 and Deep dive reports*	 'I don't like the idea of charging different rates for different places.' *Bega participant, Phase 2* 'If it changes all the time, you don't know what to expect in your bill. You want a stable bill.' *Taree participant, Phase 2*	12 Our approach to pricing Tariff Structure Statement
Two-way prices (prices that charge for both consumption and exports) The majority of you agree that: > two-way pricing will solve some of the network issues arising from integrating new technologies – with this support growing between Phases 2 and 4 and a further 17% in Phase 2 and 22% in Phase neither agreeing nor disagreeing > two-way pricing will improve fairness – though with support dropping between Phases 2 and 4, but with the proportion of customers neither agreeing or disagreeing growing from 16% in Phase 2 to 24% in Phase 4. > export charges and rebates should be applied on a postage stamp basis. However, some of you do not agree with the concept as: > charging for exports seems to discourage renewables and goes against the vision for the future > it is seen as shifting the goal posts for customers who have invested in energy resources. After further discussion in the deep dive engagement session, participants believed that two-way pricing would have a minimal impact on solar customers and understood its role in the future vision for the network.	56%/68% *Phase 2/4 reports* 62%/49% *Phase 2/4 reports* 69% *Phase 2 report* *Phase 2 report* *Deep dive report*	'When they started talking about charging me for my exports that turned me off, but looking at the big picture, I'm supportive of it.' *Taree participant with solar, Phase 2* 'Your bill goes up, but it's still a lot less than if you didn't have solar.' *Youth group participant, Phase 2* 'I think democratically it's best to share the cost and have the same pricing for everyone.' *Ballina participant, Phase 2* 'It seems like the government is attacking people after years of encouraging people to get solar.' *Dubbo participant with solar, Phase 2* 'I'm not looking at the cost factor, I spent $10K on a system to make the best future for my children because cost is not the main thing.' *Deep dive customer participant, Phase 3*	

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
Pricing *Fairness and affordability* continued			
Default 'future proof' tariff Our trial Sun Soaker tariff paired with our trial export charge is the preferred placeholder default tariff for residential and small business customers for now. This was supported by customers in the Phase 4 engagement forums. One stakeholder remains concerned that the tariff may not have longevity and that there is a need to balance the peak and off-peak prices to change behaviour enough, but not inadvertently create a new peak. With this in mind, we have included a contingent trigger in our TSS for adapting the charging windows in our two-way prices if the data shows that this is required before 1 March 2027. We will re-engage on the final structure of this tariff next year, once we have results from our tariff trials, and ahead of submitting our Revised Proposal.	*Deep dive report* 54% *Phase 4 report*		12 Our Approach to pricing Tariff Structure Statement
Free export limit There was no clear finding on the free export limit from the customer forums. Stakeholders thought we should base this on the technical limits of the network. Our future network business case indicates that our network can accommodate 1.5 kW of exports from each customer across our network on a postage stamp basis and this has been incorporated into this Proposal.	*Phase 2 report*		
Export prices for large customers connected to the low voltage network	*Not applicable*		

'It's a no brainer, you'd go with Sun Soaker.'

Deep dive customer participant, Phase 3

We are proposing to also apply an export price to the tariffs for large customers connected to our low voltage network no later than 1 July 2028, as these customers are having an export impact on our network, especially on weekends. This change that was not included in our engagement program, where the focus was educating customers about the need for two-way prices, but the question as to why these customers did not also have an export tariff was raised in response to our Draft TSS.

We assessed the need and options for applying an export tariff to large business, low voltage customers and presented a paper on this to our PCC. They agreed that adding an export price would improve fairness by ensuring our tariffs reflect the efficient costs of providing our services and is, therefore, in the long-term interests of customers. They also agreed that the structure of the export charge should mirror that in the Sun Soaker two-way tariff and the rebate amount for exports between 5pm and 8pm be aligned to the peak distribution network rate of the parent consumption tariff.

Given this is a late change to our Proposal, we are not proposing to introduce an export charge for these customers until we have the billing capabilities for a mass transition – see the export tariff transition strategy section below – and we will ensure the new tariff is revenue neutral in the first year it is introduced. We will engage on this change as part of our Revised Proposal.

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
Pricing *Fairness and affordability* continued			
Export tariff transition strategy Ability to opt in to two-way prices There was support for you to be able to opt into two-way pricing early, from 1 July 2024 onwards. Our Proposal contains this option. 'I would opt in early. I want to rip the band aid off.' *Deep dive customer participant, Phase 3* Transition date for existing smart meter customers There was support for export prices to be applied to all exporting customers from 1 July 2025. However, in the Phase 2 forum, participants seemed resigned to this rather than enthusiastic. Those customers who attended the deep dive session were supportive of two-way prices by the end of the session and supported them being implemented as early as possible. Most stakeholders also supported this view, with the main concerns being around education, system changes, addressing export limits and automation to make tariffs easier for customers to live with. After presenting the Sun Soaker two-way price and the expected network bill savings, customers still preferred an earlier transition date (1 July 2026) to the 1 July 2028 date proposed by Essential Energy (30% support). Based on this consistent desire for an earlier transition, we will endeavour to implement billing capabilities to allow us to do this. To ensure our TSS has this flexibility, we have included a contingent trigger in the pricing year following the establishment of our new billing capabilities for: 1) the reassignment of existing residential and small business smart meter customers connected to the low voltage network to the Sun soaker two-way tariff, and 2) addition of the export tariff and rebate to our demand-based tariffs for all low voltage customers. Should an earlier transition eventuate, we will provide retailers and other market participants with at least six months notice of the new transition date. Grace period for new meter changes We also heard from one retailer that they would like residential and small business customers to have a one-year grace period before being moved to a more cost-reflective tariff following a faulty meter change or a retailer led move to a smart meter. They are preparing a rule change to this effect on the basis that a year of consumption (and export) data will allow for more informed decision making by retailers and customers. Customers also supported this concept, though discussion indicated that this was again about choice and the desire for customers to be able to opt-in to the two-way price earlier if they wanted to.	74% *Phase 2 and Deep dive reports* 60% *Phase 2 report* *Deep dive report* 49% *Phase 4 report* *Deep dive report* *Submission from Red/ Lumo Energy to our Draft Proposal* 68% *Phase 4 report*	 'I'd prefer never.' *Wagga Wagga participant, Phase 2* 'Might as well do the whole lot in 2025 because to me, the sooner we get this done and sorted, the better off we'll be.' *Broken Hill participant, Phase 2* 'I think we should do it straight away.' *Deep dive customer participant, Phase 3* 'I think 2025 is a fair outcome.' *Council participant, Phase 2* 'People are going to be better off under this. If they can do it quicker than they're saying, then they should bring it in sooner.' *Wagga Wagga participant, Phase 4* 'New solar customers will know what they're signing up for.' *Broken Hill participant, Phase 4* 'One year will give the option to monitor all of the seasons.' *Bega participant, Phase 4* 'I like that I can opt in, but I also have time to get used to it.' *Aboriginal and/or Torres Strait Islander participant, Phase 4*	12 Our approach to pricing Tariff Structure Statement

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal

Pricing
Fairness and affordability continued

As part of our Phase 4 engagement we specifically asked the PCC to help develop the principles against which divergent views, such as these from customers and stakeholders, should be assessed. They agreed with our existing focus on customers' interests and alignment to the national electricity objective, the network pricing objective and our pricing principles, and suggested that we also consider the impact of any change on retailers and other market players who develop products and services for electricity consumers, to the extent that this can be done without obstructing customers' interests.

Using this lens, we are not proposing to implement a one year grace period before moving customers who receive a new smart meter to the appropriate default cost-reflective price. This is because

> It is not consistent with customers' and stakeholders' preference for a faster transition to two-way prices
> Deferring its application is not in customers' best interests given the significant administrative burden and the fact that:
  - our modelling indicates that most small customers are better off on the Sun Soaker two-way price
  - the change will be revenue neutral for large, low voltage connected customers in the first year they are introduced.
> Retailers concern in this area arises when customers are moved to demand charges, which we are not proposing to do
> Retailers have no obligation to pass on our network tariff to customers in their retail offers, and can implement a grace period for customers themselves
> Solar installers may inadvertently model their propositions on the tariff offered in the grace period, which could provide an inaccurate price signal and lead to customers over-sizing their system or facing it in a less 'valuable' direction.
> The AEMC can implement such a policy in its metering contestability review, and associated rule changes and Essential Energy would comply with any such rule change through the 2024–29 TSS period.

As such, our proposed transition to export prices is:

From 1 July 2024

> Existing residential and small business customers with an interval or smart meter can opt into the Sun Soaker two-way price
> New residential and small business connections will be placed on the Sun Soaker two-way price

From 1 July 2025

> Residential and small business customers altering a meter connection or connecting energy resources will be placed on the Sun Soaker two-way price

From 1 July 2028, or the pricing year immediately following Essential Energy establishing its new billing process capabilities

All existing low voltage customers (both small and large customers) with an interval or smart meter:

> who are on a flat rate or Time of Use tariff will be transferred to the new Sun Soaker two-way price
> who are on a demand tariff will have an export charge and rebate added to their tariff.

Ability to opt-out from cost-reflective network tariffs

Customers support the move towards more cost-reflective tariffs so long as they continue to have a choice of tariff options. Retailers support cost-reflective pricing, but highlight that tariffs needs to be simple for customers to understand and respond to. Our PCC sees choice and tariff simplicity occurring at the retail level.

Phase 2 and Deep dive reports

12 Our approach to pricing

Tariff Structure Statement

'Yes, we have to change the way we use our electricity… It makes sense to try to get people to use electricity more outside peak times.'

Inverell participant, Phase 2

'I think they should have a choice but it should be an informed choice.'

Dubbo participant, Phase 2

'Cost reflective pricing is important but you need to give customers a lot of information to make decisions and change their behaviours. The average customer is not switched on.'

Retailer, Phase 2

'A retailer is doing a really poor job in managing risk if all they're doing is taking the signal and adding on their cost to serve.'

Aggregator, Phase 2

Most customers also thought that customers with smart meters should continue to be able to opt-out to a flat rate tariff, but whether this choice should occur at the network or retail tariff level was not specifically asked.

56% *Phase 4 report*

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal

Pricing
Fairness and affordability continued

Again, using the principles we agreed with the PCC to balance diverse views, we are proposing to remove the ability for customers to opt-out to a non-cost reflective network tariff, including a flat rate tariff, because:

- It is not consistent with customers' and stakeholders' preference for a faster transition to two-way prices
- Retailers have no obligation to pass on the network tariff in their retail offers, so offering multiple network tariffs adds complexity and administrative costs that deliver no real benefit
- Customers exercise choice at the retail level and we expect retailers to offer customers a choice of retail tariffs, including a flat rate option.
- It avoids 'gaming' of network tariffs by large exporters who could immediately opt-out to a network tariff that does not include an export price.

Low voltage connected customers with interval or smart meters will only be able to opt-out from the default tariff to another cost-reflective tariff.

In line with our export tariff transition strategy, the alternative tariffs will have an export charge and rebate applied to them from 1 July 2028, or the pricing year immediately following Essential Energy establishing its new billing process capabilities.

Customer education

In line with consistent suggestions from you and other stakeholders, we will undertake marketing and education leading into and throughout the 2024–29 regulatory period in relation to:

- the current and emerging network challenges
- how smart meters can help customers lower their electricity bills
- the importance of shopping around for a retail offer
- the introduction of two-way network prices and how this may impact customers' solar panel installation decisions.

We will have the chance to test some of these education ideas in our trial that is currently underway.

In addition, we will look to pair two-way pricing with customer benefits to help avoid negative perceptions and consider whether there are further education opportunities arising from the results of the AEMC's metering review.

Phase 2 and Deep dive reports

Affordability
Future focused
Transparency and simplicity
Collective benefit

'Education and information will be the key.'

Deep dive customer participant, Phase 3

'Unlocking peer-to-peer in a real way is the pathway for a positive story.'

New technology provider, Phase 2

9 Operating expenditure

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
Other essential services *customer service and more*			
Rewards or penalties related to our customer service You preferred customer service be measured using both internal data (quantitative) as well as data related to customer experience (qualitative). Both were seen as equally important. 'Need communication in all outages, it builds trust. It doesn't matter how short.' *Inverell participant, Phase 2* 'Internal collected data is always going to give you the cold hard facts about what's going on internally. But customer feedback is equally important as it gives you customer attitudes towards your service and levels of satisfaction … I think you have to have both types.' *Broken Hill participant, Phase 1*	59% *Phase 1 report*	Safety, Good customer service and communication	8 Framework and approach
You supported measuring outcomes in the following areas: > communicating accurate planned outage times and an estimated time to restore unplanned outages (and the accuracy of the timeframe) 'It's all about communication during an outage. People want to know how long the power is going to be out for. [You] may not know that sometimes, but [you] should share what [you] do know.' *Broken Hill participant, Phase 1*	94% *Phase 1 report*		
> the time taken to facilitate connections to the network and the average time to resolve customer complaints 'I think the time taken to resolve a complaint is also an important measure, but maybe not as critical as outages.' *Taree participant, Phase 1* 'To me, I'm surprised that the time taken to facilitate a connection isn't already a measure that Essential Energy is being assessed against. It's really a core deliverable.' *Bega participant, Phase 1*	85% & 81% *Phase 1 report*		
There was limited support for retaining the current measure – the percentage of calls to our fault line answered within 30 seconds. 'I don't think [you] can rely on measuring phone calls anymore. There are so many other ways of interacting with them. I haven't phoned [an energy provider] for years.' *Taree participant, Phase 1*	50% very or quite important *Phase 1 report*		
<u>Support for the proposed metrics</u> In our Phase 4 forums, we presented customers with a proposed CSIS measure, comprising three customer service metrics: > Providing an estimated time to restore unplanned outages and updates > How easy it was to deal with us > Average time to resolve customer complaints There was support for these three metrics, though we did hear that the *accuracy* of unplanned outages is important. So, whilst the main business focus for 2024–29 will be implementing the related cultural and process changes, we will track the accuracy of estimated restoration times over the period and consider introducing accuracy into the measure in the next regulatory period. 'They match what we discussed and they make sense' *Ballina participant, Phase 4* 'If it is inaccurate, then the (estimated time to restore) is useless.' *Bega small business participant, Phase 4*	81% *Phase 4 report*		

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
Other essential services *customer service and more*			
Support for the proposed metric weightings		Safety; Good customer service and communication	8 Framework and approach
Customers weightings for the proposed measures in the Phase 4 forums were slightly different from Essential Energy's proposal	Essential Energy proposed weighting / *Phase 4 report*		
> Providing an estimated time to restore unplanned outages and updates	50% / 50%		
> How easy it was to deal with us	25% / 21%		
> Average time to resolve customer complaints	25% / 29%		
Based on these results, we are proposing the following weightings: 50%, 20% and 30%, to recognise that customer complaints are more important than how easy it was to deal with us. You can read more detail about our engagement journey to develop the CSIS in **Attachment 4.02**.			
Costs for inspecting and maintaining private assets There was support for continuing to share the costs among all network users for: > inspecting private assets > maintaining vegetation around private assets. Our Proposal includes the continued cost recovery of these services from all our network customers.	46% & 44% *Phase 2 survey*	Good customer service and communication; Future focused; Affordability	8 Framework and approach
New public lighting services There was support for Essential Energy to provide councils with the ability to 'plug in' additional technologies to streetlighting poles. Our existing inventory listing provides councils with this technology capability and this will be retained in our 2024–29 inventory listing.	82% *Phase 2 survey*		8 Framework and approach 13 Alternative control services
Public lighting services We undertook a survey and four rounds of dedicated engagement with councils in relation to public lighting service offerings, service levels and pricing. The outcomes from this engagement are reflected in our Proposal. You can find more detail about our engagement with councils in relation to public lighting in **Attachment 4.02**.			13 Alternative control services

'50% weighting for unplanned outages, as it's clearly important.'

Bega participant, Phase 4

'The current rate [to resolve complaints] is appalling/unacceptable. They really need to work on this area, so it is important that it is given more focus'

Taree small business participant, Phase 4

What we heard from customers and our response	Customer support	Alignment to customer priorities	Where it's reflected in this Proposal
Other essential services *Customer service and more* continued			
New customer service relationship system and online portal or App There is support for us to offer targeted and real-time information to customers by creating either an online portal or App. Customers' most preferred services for an online portal or App are: > reporting an outage and seeing updates on the time to restore > reporting a faulty streetlight or network issue and seeing updates on when it will be fixed > reporting vegetation issues and seeing updates on when vegetation will be trimmed. 'I would prefer a portal that tells you what the outage is and how long it would be.' *Wagga Wagga participant, Phase 2* There is support for us to implement a new customer relationship management system with this online portal capability, but: > the indicative bill impact shown in the forums was considered by some to be too high as it was thought that this system should largely pay for itself > the implementation of the portal should not lead to customers losing the ability to talk with someone. Retailers and councils would like to see the online portal capability extended to serve their needs around development applications and multi-premise sites – some customers and stakeholders suggested this function could be provided on a user-pays basis. 'From a council perspective, I would go option D. Council is frustrated with trying to speak to the right person within Essential Energy.' *Council participant, Phase 3* Our Proposal includes customers preferred option from the Phase 3 forums. No allowance has been made to extend the portal application to councils, retailers or more complex business structures. There are additional benefits to customers from the implementation of the new system, for example, freeing up staff so they can deal with complaints faster.	89% *Phase 2 survey* 87% 70% 68% *Phase 2 survey* 50% *Phase 3 report* *Phase 3 report*	Safety, Good customer service and communication 'I want notifications from an app on my phone with a link to more information.' *Wagga Wagga small business participant, Phase 2* 'I am a fan of new portals and systems. It definitely improves businesses.' *Taree participant, Phase 3* 'It's surprising they don't have this! Everything is online now.' *Broken Hill participant, Phase 3* 'I understand that having a unified system is important – but ideally, I don't think that the customer should foot the bill.' *Ballina participant, Phase 3* 'If they bring it in, are we going to be told to log into the portal? I need to talk to a person.' *Inverell participant, Phase 3* ' ... businesses should pay for it themselves. We're talking about a fairly substantial difference between option C and D.' *Aboriginal and/or Torres Strait Islander participant, Phase 3*	7 A network fit for the future 9 Operating expenditure 10 Capital expenditure

Summary of SCC input

The SCC was the primary collaborator in the co-design of this Proposal. We generally engaged with this group on a fortnightly basis and used their knowledge to inform the details of what we engaged on with customers as well as providing feedback to inform a number of other regulatory aspects within our Proposal, including some of the requirements of the Australian Energy Regulator's (AER's) Better Resets Handbook. Many of these topics were deemed to be less important to customers given their impact on our required revenue, the ability for customers to influence the decision or a combination of both. A summary of these topics and how our position has been informed by the SCC is shown below.

Topic	Engagement with the Stakeholder Collaboration Collective	Where it's reflected in the Proposal
Incentive schemes	The SCC supported the continued application of existing incentive schemes and agreed we should redesign the customer service measure in collaboration with customers. Following customer feedback, the SCC was instrumental in shaping the design of our proposed CSIS. You can read more about the development of our CSIS in **Attachment 4.02**.	8 Framework and approach
Cost pass through events	The group guided the development of our proposed wording around natural disasters and cybersecurity. On the advice of the SCC, we looked into including indirect costs associated with the *NSW Electricity Infrastructure Roadmap* renewable energy zones as a potential pass through; however, this was not achievable under the NER.	
Control mechanism	It was recognised that the AER has a low appetite to change the current form of control. Applying a different control mechanism to export pricing was considered but was not a possibility under the NER.	
Service classification	We discussed the breadth and depth of our proposed service offering in relation to export services, SAPS and the leasing of spare capacity in network batteries.	
Managing risk and value	We presented our risk management approach to the SCC who agreed that our proposed risk appetite was appropriate, and that we must remain alert to ensure that our risks are not a static measure.	6 Risk appetite, resilience and reliability
Future network business case	We provided the SCC with updates on this project, which is about integrating consumers' energy resources into our network and gave them the opportunity to provide input into the design and approach.	7 A network fit for the future
Demand and customer forecasts	We presented our forecasting approach and draft results to the SCC for comment and feedback. Our approach is aligned with the AEMO methodology and the AER's expectations. The SCC had no issues with our proposed approach and results. NB. It is worth a reminder that our forecasts were undertaken before the AEMC published its Draft Report into metering services that proposes a much faster uptake of smart meters. We will monitor the progress of this review and include the required changes in our Revised Proposal to the AER.	11 Energy and demand forecasts
Operating expenditure	We presented our base step trend approach and numbers to the group as well as the opex for each of our non-system categories. All were considered reasonable.	9 Operating expenditure
ICT expenditure	The SCC directed us to engage with them rather than customers in relation to options for our cyber security investment and proposed new billing and meter data system. Our Proposal includes investment in the mid-range for both our cyber security and new meter data and billing system. Our presentation on our ICT portfolio to the group was accepted.	9 Operating expenditure 10 Capital expenditure
Capital expenditure	We presented drafts of each of our capex portfolios to the SCC, explained current period spend and the reason for any under or overspend, as well as how the 2024–29 proposed expenditure had been determined and the reasons for any increases or decreases.	10 Capital expenditure
Climate change risk modelling	We presented an overview of our climate change risk modelling and how this has impacted our proposed investments, including the identified microgrid sites and composite pole locations and the associated decrease in the number of proactive composite pole replacements in high risk areas. The group had no concerns with our approach.	9 Operating expenditure 10 Capital expenditure

Topic	Engagement with the Stakeholder Collaboration Collective	Where it's reflected in the Proposal
RAB and depreciation	We shared the options around minimising the growth of our asset base. The group agreed that bringing on more load to increase network utilisation was the preferred option – this aligns with our Corporate Strategy. The SCC supported us creating a new asset category called 'distributed energy resources' with a standard life calculated on the weighted average cost to appropriately categorise new technologies like solar panels, batteries and generators.	6 Risk appetite, resilience and reliability 7 A network fit for the future 10 Capital expenditure
Tariff Structure Statement	The SCC provided feedback on our draft Pricing Principles and Guiding Principles for the 2024–29 TSS. They directed us to establish our Pricing Collaboration Collective with whom we engaged on seven occasions to co-design many elements of our TSS. The details of this engagement piece can be found in **Attachment 4.02 - How engagement informed our proposal**. We presented our final TSS changes following the Draft Proposal and subsequent PCC meeting to the group and they agreed with our proposed alterations.	Tariff Structure Statement

Overall, the SCC was highly complimentary of our collaborative engagement approach, both with the group but also with our customers and stakeholders. They could see that we genuinely listened to feedback and altered our approach and proposal as required. This on-going dialogue and genuine engagement approach meant that when we published our Draft Proposal in September 2022, we received no major pushbacks.

'It shows … the process we've gone through to get here … all the consultation, all the reflection and reconsidering, it was hard work, but it was really good to allow that level of influence …I thought it was a really good example of consultation and engagement that has an impact.'

SCC member, November 2022

Summary of PCC input

Our PCC was our primary input group for the co-design of our TSS and export tariff transition strategy. We began engaging with this group more or less on a monthly basis and used their knowledge to

- inform the pricing-related topics and materials that we engaged with customers on, and
- apply a principled approach to making decisions on topics where there were divergent views between or amongst customers and stakeholders.

A summary, of how the PCC informed our TSS and topics that interact with the export tariff transition strategy is shown below, and more details can be found in Appendix C of **Attachment 4.02 – How engagement informed our Proposal**.

Topic	What we heard	What we did
Tariff classes	There was support for retaining the existing tariff classes	We have left our tariff classes unchanged in the TSS
Tariff design decisions	The PCC considered the tariff design process must consider two broad pricing decisions: 1) changing behaviour, and 2) changing who pays what relative shares of your total revenues	We have considered both these decisions and our plan seeks to change behaviour for low voltage connected customers through introducing two-way consumption and export savings opportunities, whilst not changing the total shares of our revenue recovered from different tariff classes.
Long-run marginal cost	The PCC agreed that we should seek to estimate long-run marginal costs separately for peak demand and for peak exports. Given the newness of the obligation for two-way services and the evolving technologies and behavioural tools for integrating flexible demand and flexible exports, the PCC considered we should adopt a 10 year forecasting horizon.	We estimated long-run marginal costs using a 10 year forecasting window and did so separately for peak demand and for peak exports at each voltage level. Our relevant tariffs are based on these estimates.
Export pricing – timing considerations	There was unanimous support for starting cost recovery of energy export enablement costs from the start of the next regulatory period rather than the date of the rule change.	Our TSS bases our export tariff on the long run marginal cost of peak exports calculated over the 10 years from July 2024.
Tariff structures	The PCC suggested we need to get ahead of the curve when designing tariffs, not just focus on what works now. The focus should go to where we want to be. The PCC also suggested that: - peak and minimum demand in the design for each customer cohort should be considered, and - Tariff structures and assignment should seek to support device neutrality for residential and small business customers. The PCC agreed that export prices should be applied to all low voltage connected customers, using the same charge structure and tariffs for exports and a rebate equivalent to the distribution peak charge.	Our default cost reflective tariffs for low voltage connected customers include two-way prices and are designed for a future state that: - will work with different energy using or producing technologies that customers connect to our network - empower our customers to save money through choosing when to use and export energy by pairing our export charges with an evening peak export rebate incentive payment and lower consumption charges for residential and small business customers who can take advantage of discounted midday consumption charges in the Sun Soaker two-way tariff - recover sustainable levels of cost from each customer.

Topic	What we heard	What we did
Tariff assignment		
(i) Ability to opt out from default tariffs	Prior to publishing the Draft TSS in September 2022, the PCC was presented with two opt out tariff options from the Sun Soaker two-way: 1) legacy anytime tariff is available for opt out 2) legacy anytime tariff is not available for opt-out only other cost-reflective tariffs. The PCCs preference was for option 2 i.e., not making the legacy anytime tariff available for opt-out. However, the PCC noted that the principle guiding tariff assignment should be "what is in customers' long-term interests?". As such, a third option was identified i.e, providing customers with no network tariff choice, only retail choice.	Following Phase 4 engagement, opt out ability was again revisited by the PCC under the PCC agreed principles. With this lens, it was agreed to remove the ability for customers to opt out from cost reflective network charges. This means that by the end of the 2024–29 regulatory period, low voltage connected customers with smart meters will have a choice of just two cost reflective two-way tariffs. More details on this topic are included in the Pricing section of *The results of our customer and stakeholder engagement across our engagement themes* table above.
(ii) Discretionary reassignment	The PCC supported customers and their retailers only having one discretionary opt in reassignment per 12 months to avoid seasonal tariff changes that undermine cost reflective tariff signals.	Our TSS assignment policy maintains our current policy of allowing one discretionary opt in reassignment per 12 months.
(iii) Applying a one year grace period before applying a cost-reflective network tariff	The PCC was never supportive of applying the retailer requested one year grace period. We tested customer support for a grace period in our Phase 4 forums and found it was supported so long as customers' could opt in to the more cost-reflective Sun Soaker two-way tariff earlier if they wanted to.	Given the divergent views, we again applied the PCC agreed principles in a final meeting with the group. Using this lens, it was the PCC's preference to not offer a one year grace period before moving customers who receive a new smart meter to the appropriate default cost-reflective price. More details are included in the Pricing section of *The results of our customer and stakeholder engagement across our engagement themes* table above.
(iv) Export tariff transition strategy	The PCC supported the export tariff transition strategy: > They liked the phased approach to assigning residential and small business customers to the default Sun Soaker two-way tariff, and the inclusion of a provision for customers to opt in early. > For low voltage connected large customers, the PCC supported applying export prices to large customers when our billing capabilities allow, and no later than 1 July 2028.	Our TSS has a phased transition to move low voltage connected customers to two-way prices.

Topic	What we heard	What we did
Managing cost reflective tariff transition	As more customers continue to transition to cost reflective tariffs, those tariffs should recover a fair share of our total costs. Current opt in tariffs that have been discounted should also recover a fair share of our total costs in future. The PCC supported our Draft TSS approach to avoiding price volatility amid tariff transition.	Our TSS seeks to avoid future price volatility amid cost reflective tariff transition by setting sustainable cost recovery levels on all tariffs supported by: > Heavily reducing the current discount offered in our low voltage demand charges in the first year of the 2024–29 period and further closing the gap in each subsequent year through to 1 July 2028 > Keeping fixed charges: • equal across all open tariffs by customer type (as we do now) • stable by applying the inflation element of our allowed revenue growth to this fixed charge in the first instance, though by no more than 2.5% per annum. Where inflation exceeds 2.5% in any year, the balance will be recovered through consumption charges This has supported us in keeping the relative share of residual costs recovered from each tariff class stable over the 2024-29 TSS period as about 60% of our customers are transitioning from legacy to cost reflective tariffs.
Charging windows	The PCC agreed that our charging windows align with daily profiles of demand and exports, and so there is no need to change them from our trial tariffs for the Sun Soaker or the introduction of an export price. Despite this, it was agreed that a contingent trigger should be included in the TSS in case data indicates that our charging windows need to be changed.	We have maintained our charging windows for existing tariffs and adopted the time windows from our trial tariffs for the Sun Soaker two-way and the export price to be applied to large low voltage connected customer tariffs and the residential and small business customer demand tariff. We have included a contingent trigger in our TSS for adapting the charging windows in our default prices if the network load profile data shows that this is required before 1 March 2027.
Sun Soaker two-way risks	One PCC member was concerned that our Sun Soaker tariff: > may create a new network peak in the middle of the day and so may not have longevity > may create problems if many instances of higher demand on our network during solar times coincide with lower volume in the network or higher cost generation > is not cost-reflective because it rewards the beneficiary of the problem rather than penalising the causer of the problem.	> We do not expect the Sun Soaker to create a new peak given that many customers have limited discretionary load. > While our trials have the Sun Soaker as a stand-alone tariff, we are pairing it with our export price in our TSS to address the export demand problem from both sides. > We will use the results of the trials in relation to these factors to inform our re-engagement in 2023 prior to submitting our Revised TSS to the AER. > As mentioned above, we have included a contingent trigger in our TSS for adapting the charging windows in our default prices if the data shows that this is required before 1 March 2027.
Closing our legacy (obsolete) tariffs	The PCC was supportive of: > removing our legacy tariffs as 90% of the 200 or so affected customers are better off on the default cost reflective tariff. > implementing an engagement approach for the small number of customers (approximately 20) that may be worse off on the default cost reflective plan, including education on how they can seek to save money on the new tariff structures.	Our TSS proposes to remove our non-cost reflective legacy tariffs and implement an engagement plan for affected customers. These tariffs had already been closed to new customers in our current TSS period.

Topic	What we heard	What we did
Alternative Control Services prices	We presented our approach to pricing Alternative Control Services and the PCC encouraged us to ensure that we account for diseconomies in our metering costs as the smart meter rollout progresses.	Our Proposal forecasts have considered the impact of decline in number of basic meters on average costs to read each meter. It is worth reminding that our forecasts were undertaken before the AEMC published its Draft Report into metering services that proposes a much faster uptake of smart meters. We will monitor the progress of this review and include any required changes in our Revised Proposal to the AER.

Our PCC also found our engagement process to be genuinely collaborative and demonstrative of the fact that we didn't just listen to feedback, but that we responded to appropriately address and balance concerns in our final TSS.

'Essential Energy's engagement has been exceptionally thorough. The quantitative customer evidence has been garnered from rigorous and deliberative engagement. Essential's engagement in this process has been top-notch.'

PCC member, November 2022

'There has been a genuine intent from Essential Energy to garner customer preferences and to have this conversation in a meaningful way. Essential has really listened to stakeholders and have responded to feedback provided throughout the engagement process.'

PCC member, November 2022